

1 UNITED STATES DISTRICT COURT
2 WESTERN DISTRICT OF WASHINGTON
3 IN SEATTLE

4 UNITED STATES OF AMERICA, et al.,)
5)
6 Plaintiffs,) No. C70-9213
7) Subproceeding 01-1
8 v.)
9) FINAL
10 STATE OF WASHINGTON, et al.,)
11)
12 Defendants.)
13)

14 TRANSCRIPT OF PROCEEDINGS

15 BEFORE THE HONORABLE RICARDO S. MARTINEZ

16 October 14, 2009

17 APPEARANCES:

18 Mr. Peter C. Monson
19 U.S. Department of Justice
20 Environment & Natural Resources Division
21 Rogers Federal Building
22 1961 Stout Street - 8th Floor
23 Denver, CO 80294

24 Rene David Tomisser
25 Fronda C. Woods
Douglas D. Shaftel
Philip M. Ferester
Attorney General's Office
P.O. Box 40100
Olympia, WA 98504

John C. Sledd
Laura Sagolla
KANJI & KATZEN
100 South King Street, Suite 560
Seattle, WA 98104

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

Alan C. Stay
Muckleshoot Indian Tribe
39015 172nd Avenue S.E.
Auburn, WA 98092

Tim R. Weaver
COCKRILL & WEAVER PS
316 North Third
Yakima, WA 98907

Daniel A. Raas
Harold Johnsen
RAAS JOHNSEN & STUEN PS
P.O. Box 5746
Bellingham, WA 98227

Mason D. Morisset
Rob Roy Smith
MORISSET SCHLOSSER AYER & JOZWIAK
801 Second Avenue
11115 Norton Building
Seattle, WA 98104

Alix Foster
Swinomish Indian Tribe
11404 Moorage Way
La Conner, WA 98527

Harold Chesnin
Confederated Tribes of Chehalis
1810 43rd Ave. E. Suite 203
Seattle, WA 98112

Lauren Rasmussen
1904 Third Avenue
Securities Building, Suite 1030
Seattle, WA 98227

John Hollowed
6730 Martin Way East
Olympia, WA 98506

Samuel Stiltner
Puyallup Tribe
3009 Portland Avenue
Tacoma, WA 98404

INDEX OF WITNESSES

MICHAEL McHENRY	PAGE
(Continued)	
Cross by Mr. Shaftel	2
Redirect by Ms. Foster	23
Recross by Mr. Monson	29
MARTIN FOX	
Direct by Mr. Stay	35
Cross by Ms. Woods	60
KIT RAWSON	
Direct by Mr. Morisset	101
Cross by Mr. Tomisser	111
Redirect by Mr. Morisset	125
KAREN WALTER	
Direct by Mr. Stay	128
Cross by Mr. Shaftel	155
Redirect by Mr. Stay	185

1 THE COURT: Counsel, any matters that we need to take up
2 before we get started?

3 MR. SLEDD: Yes, your Honor, if we could. We did work
4 over the evening, and there are a number of exhibits that we
5 would like to read into the record. There are two of these that
6 are joint exhibits and will be designated with the JX label.

7 The remainder were ones where both sides put them in their
8 exhibit list. We had hoped to actually make a single exhibit.
9 But because they are already numbered and in the Court's binders,
10 that would be an awful lot of work.

11 What we thought we might do instead, with the Court's
12 blessing, is we would read them in as unobjected on each side.
13 And then at the end of the trial, we can give the Court a paper
14 that basically says these are the same exhibits.

15 THE COURT: That would be extremely helpful. Thank you.

16 MR. SLEDD: With that, then, if I could, and hearing no
17 objection, I'd like to offer into evidence the following two
18 joint exhibits: JX-2-A and JX-25. For the record, JX-2-A was
19 previously used as an exhibit in earlier sub-proceedings in US v.
20 Washington.

21 In addition, I would like to offer into evidence the
22 following tribal exhibits: AT-051, 071, 072, 145, 153, 155, 186,
23 237, 239, 257, 258, 259, 260, 114 and 117, and also 119, 120 and
24 192.

25 And then finally the United States' exhibit, with

1 Mr. Monson's permission, USA 198. And that's all on plaintiffs'
2 side.

3 MR. TOMISSER: Similarly for State's exhibits, your
4 Honor, coming in by stipulation now is W 092-E, W 092-0, W 089-B,
5 W 093-G, W 091-B, W 087-B, W 093-0 --

6 THE COURT: D.

7 MR. TOMISSER: Sorry.

8 THE COURT: It's my handwriting.

9 MR. TOMISSER: That's why we're putting this together.

10 W 093-F, W 088-H, W 091-A, W 091-D, W 092-F, W 092-G, W
11 092-H, W 092-I, W 85-C, W 087-F, W 89-D, W 89-C, 89-E, and 87-L.

12 THE COURT: Then each of those exhibits will be
13 admitted. Just give me a minute.

14 Counsel, thank you. We were on cross-examination of
15 Mr. McHenry.

16 Mr. Shaftel.

17 (Continued cross-examination)

18 By Mr. Shaftel:

19 Q Good morning, Mr. McHenry.

20 A Good morning.

21 Q Yesterday we spoke briefly about hatchery reform. One of the
22 things that hatchery reform tries to address is the impact of
23 out-of-basin hatchery stocks on wild stocks; is that correct?

24 MS. FOSTER: Objection, your Honor. Counsel is
25 testifying.

1 THE COURT: The objection to the form of the question is
2 sustained.

3 Let me just have you rephrase.

4 By Mr. Shaftel:

5 Q Is it correct that one of the things that hatchery reform
6 tries to address is the impact of out-of-basin hatchery stocks on
7 wild stocks?

8 A Yes, I believe so.

9 Q In fact, out-of-basin hatchery stocks can interbreed with
10 wild stocks, and that is a bad outcome?

11 A In some cases, yes.

12 Q They can also compete for habitat, which is also bad for wild
13 stocks?

14 A Yes.

15 Q And hatchery reform attempts to address those two issues?

16 A It is an attempt to address some of those negative impacts.

17 Q And so if we open up habitat without having addressed those
18 issues, that also would be bad; is that correct?

19 A Yes.

20 Q Now, DOT started its inventory efforts of its state highway
21 system through DFW's help in 1991; isn't that correct?

22 A That is correct.

23 Q So by 1999, DOT had been working on its inventory for almost
24 eight years; is that correct?

25 A Yes.

1 Q And in many watersheds, it had completed its inventory, isn't
2 that correct, by 1999?

3 A I'm not sure about that.

4 Q It had completed its inventory in WRIA 18, is that correct,
5 by 1999?

6 A They had inventoried culverts. Whether it was complete or
7 not, I don't know.

8 Q So they had made an effort to inventory state culverts in
9 WRIA 18 by 1999?

10 A I believe so.

11 Q And that is also true for WRIA 19?

12 A Yes.

13 Q Now, at the time that the limiting factors analyses conducted
14 in WRIAs 18 and 19 were performed and published, this information
15 was the most extensive information we had about limiting factors
16 in WRIA 18 and 19; is that correct?

17 A It was probably the most extensive information regarding
18 barrier culverts -- the state-owned barrier culverts in those
19 watersheds.

20 Q As well as the most extensive information that we had about
21 other limiting factors in those watersheds as of those years that
22 they were published?

23 A At that time, it was a reasonable compilation of the
24 available data.

25 Q Now, before we ended yesterday, I was asking you about the

1 limiting factor analysis for WRIA 18. And I had asked you
2 whether or not you remembered what the descriptors were for
3 access as summarized in that document, and you said you didn't
4 remember; is that correct?

5 MS. FOSTER: Objection, your Honor. Counsel is
6 attempting to impeach the witness with this document, and I have
7 not been provided a copy of the document.

8 THE COURT: The form of the question --

9 MS. FOSTER: As provided by the rule.

10 THE COURT: All right. Thank you, Counsel. The form of
11 the question is also improper.

12 Let me just have you ask him directly.

13 By Mr. Shaftel:

14 Q Do you remember what the descriptors were for fish access, as
15 summarized in the limiting factor analysis for WRIA 18?

16 A As I said yesterday, I don't remember.

17 Q Would it help refresh your memory if I showed you a copy of
18 those -- of the table that was attached to that document?

19 A It might.

20 Q I have just put up -- do you recognize the document before
21 you?

22 A Yes, I do.

23 Q What is the document?

24 A It is the WRIA 18 LA.

25 Q That is the one we are discussing?

1 A Yes.

2 Q Is this Page 176 of that document, as you recall it?

3 THE COURT: Can you see that?

4 THE WITNESS: Can you blow it up? It's awfully small.

5 It is Page 176, I can see that.

6 By Mr. Shaftel:

7 Q Have you reviewed this page before?

8 A It's been ten years.

9 Q I'm sorry. Was your answer that you have not reviewed it
10 before?

11 A It's been ten years.

12 Q But you have reviewed it?

13 A Yes.

14 Q Does this refresh your recollection as to the descriptors
15 that were identified in that report for fish access?

16 A Well, it appears to be a compilation of habitat and water
17 quality factors, and it seems to lack access.

18 Q Do you see the highlighted column right next to the WRIA
19 index?

20 A "Fish access," yes.

21 Q And you participated in giving input into this study; isn't
22 that correct?

23 A Yes.

24 Q Does this refresh your recollection as to the conclusions
25 that were arrived at in this study with regard to the descriptors

1 for fish access?

2 A Except you are going to have to refresh my memory on what the
3 codes are, F1, P1, DG.

4 Q Look at the bottom, and I believe there is a legend.

5 A There it is. Okay.

6 Q Is that consistent with how you remember them to be?

7 A Well, it would be nice to have some more time to review it,
8 but, yeah, it looks -- at that time.

9 Q That is consistent with the document that you reviewed when
10 it was published in 1999; is that correct?

11 A This was the table that was published in 1999, yes.

12 Q And for the majority of the watersheds listed here, the
13 condition of fish access is described as either fair or good; is
14 that correct?

15 A Yes. It is fair or good in this document.

16 Q Is that consistent with your memory of the conditions and the
17 input that you gave?

18 A Well, I don't believe I gave any input on access on this
19 table, so I don't know who the primary author of this was.

20 Q You don't know who the primary author of this document was?

21 A I know who the primary author of the document is, but I don't
22 know who produced this table. It was not me.

23 Q You didn't give any input as to fish access?

24 A I can't remember. This is ten years ago.

25 Q Sure. Do you recall giving any input on any of these

1 watersheds?

2 A Certainly.

3 Q Which ones would they have been?

4 A It could have been any of them. I am quite familiar with all
5 of them.

6 Q You're familiar with Peabody Creek?

7 A I am.

8 Q And Peabody Creek, as you can see there, is listed as having
9 poor habitat conditions all throughout or having data gaps,
10 except for low flow, where it's identified as fair; is that
11 right?

12 A Yes.

13 Q And is that consistent with your understanding of the
14 conditions of Peabody Creek?

15 A Yes. It's blocked by culverts.

16 Q In addition to it being blocked by culverts, it also has very
17 degraded habitat; is that correct?

18 A I would say that is actually incorrect. Once you get above
19 all the barriers, there is actually some decent habitat within
20 Olympic National Park.

21 Q That's not what this document reflects, though, is it?

22 A Apparently not.

23 Q And so you're disagreeing with the conclusions of this
24 document?

25 A In regards to the table on Peabody Creek, yes.

1 Q Would you agree with the general proposition that this
2 document -- that the conclusions arrived at in the -- would you
3 agree with the general proposition that there are numerous
4 watersheds that have degraded habitat upstream of the barrier
5 culverts in WRIAs 18 and 19?

6 A It's a mix --

7 MS. FOSTER: Object to the form of the question.

8 THE COURT: Do you understand the question?

9 THE WITNESS: Could you repeat it?

10 MR. SHAFTEL: Sure.

11 THE COURT: Or rephrase it, Counsel.

12 MR. SHAFTEL: Sure.

13 By Mr. Shaftel:

14 Q Isn't it true that there are numerous watersheds in WRIAs 18
15 and 19 that have barriers upstream from the barrier culverts?

16 MS. FOSTER: Objection, your Honor. How does
17 Mr. Shaftel define "numerous"?

18 MR. SHAFTEL: Do you understand the question?

19 THE WITNESS: I do.

20 THE COURT: All right. You may answer.

21 THE WITNESS: It is a complicated answer, because the
22 habitat conditions vary widely. There are degraded habitats
23 above some of the barrier culverts. There is also functional
24 habitat above some of the barrier culverts.

25 By Mr. Shaftel:

1 Q And it differs watershed by watershed?

2 A Yes.

3 Q For those habitats where there is degraded habitat, by
4 opening up barrier culverts, you are not going to have full use
5 of that habitat until you address the habitat issues; isn't that
6 correct?

7 A Certainly there are habitat issues that need to be addressed
8 above and beyond culverts.

9 Q And that's true for both WRIA 18 and 19?

10 A That is correct.

11 Q Now, you had input on the limited factor analysis on WRIA 19
12 as well; is that correct?

13 A Yes.

14 Q And did you review the limiting factors analysis report once
15 it was published?

16 A Yes.

17 Q Did you review it before it was published?

18 A Yes.

19 Q Did you give input on it before it was published?

20 A I believe so.

21 Q Was that input incorporated?

22 A Yes.

23 Q Now, isn't it true for the Pysht River system on WRIA 19 that
24 human-caused blockages were considered to be a minor habitat
25 factor?

1 A At that time.

2 Q And isn't it true for the Clallam River, blockages comprise a
3 lesser impact on salmon production?

4 A Clallam River. And yes.

5 Q Thank you.

6 And with regard to Deep Creek, the blockages were described
7 as having comprised a lesser impact on salmon production?

8 A Blockages were relatively minor in Deep Creek.

9 Q And they were considered a lower priority for restoration
10 activity; isn't that correct?

11 A Yes.

12 Q And on the Hoko River, they were considered to be a minor
13 limiting factor?

14 A At that time. I would characterize it as a moderate factor
15 today, given the knowledge that we have.

16 Q And along the Sekiu River, they're considered to be a minor
17 limiting factor?

18 A At that time, yes.

19 Q I want to talk to you about your efforts you have made on
20 Salt Creek. When you went out and did this habitat assessment on
21 Salt Creek, you didn't identify any new state highway system
22 culverts, did you?

23 A No. No new highway culverts.

24 Q You were aware of those -- they were already identified?

25 A Those were in the database, yes.

1 Q And that Salt Creek study, that was funded by the SRF Board?

2 A It was funded by the SRF Board, yes.

3 Q Which is a state program?

4 A Correct.

5 Q And in 2004, you believed that barriers were the foremost
6 problem there, after having completed your study; is that
7 correct?

8 A That is correct.

9 Q But then you went out and you made significant progress on
10 that issue; isn't that correct?

11 A Yes. We corrected 17 of the blockages.

12 Q And you say "we," you mean "we," as in the tribes with state
13 help; isn't that correct?

14 A We, as the tribe with our project partners, with state and
15 federal financial help, yes.

16 Q And that state help came in the form of SRF board funding?

17 A Multiple sources. It came from the SRF Board. It has come
18 from NOAA, the Open Rivers Initiative Program, from the BIA
19 Watershed Restoration Program.

20 Q These were all competitive grants?

21 A Yes.

22 Q And none of this was tribal hard dollars?

23 A No.

24 Q And the SRF Board, in fact, provided \$688,000 for corrections
25 of county barriers along Salt Creek?

1 A Correct.

2 Q And you also went out and fixed five DNR barriers with DNR
3 assistance and funding, correct?

4 A Are you still in Salt Creek?

5 Q I believe so. Am I?

6 A Well, we have had multiple projects with DNR. I just want to
7 make sure we are in the right basin. In Salt Creek, we used the
8 BIA monies to correct the DNR barriers.

9 Q You have had DNR funding on barriers elsewhere?

10 A We have had funding under the FFFPP program: Family Forest
11 Fish Passage Program.

12 Q And that's a DNR-funded program?

13 A It's funded by DNR, yes.

14 Q And you fixed barriers in Salt Creek using that state
15 funding; is that correct?

16 A That is correct.

17 Q And so I heard you say yesterday, and this is a little
18 different than I understood before, but you fixed 17 barriers of
19 31 identified in Salt Creek?

20 A If my accounting is correct, yes.

21 Q In fact, so much progress has been made on barrier correction
22 that habitat restoration is now more important than barrier
23 correction in Salt Creek?

24 A Following our prioritized restoration strategy, we will be
25 moving to other types of projects in the future.

1 Q So is that a yes?

2 A Yes.

3 Q And then one of the other places that you worked with DNR is
4 on Little Hoko; is that correct?

5 A That would be incorrect. State parks.

6 Q You didn't work with DNR on Little Hoko?

7 A Well, the state parks is the landowner, if that's what you
8 mean by "work with."

9 Q When I asked you that question at your deposition --

10 A Well, you're talking about funding. Yes.

11 Q It was DNR funding?

12 A DNR funding to do the work.

13 Q Now, you don't have any criticisms of DFW's methodology for
14 conducting habitat assessments, do you?

15 A No. They are a reasonable assessment method.

16 Q It is actually quite an extensive effort, isn't it, where
17 they actually go out and take measurements every 30 meters
18 upstream until they get to a natural barrier?

19 A Yes.

20 Q It is an accurate way of determining the amount of habitat
21 upstream?

22 A I believe it's reasonable and accurate.

23 Q Now, in your declaration, you talk about culvert blowouts
24 that happen due to landslides; is that correct?

25 A The mechanism of culvert failures are varied. They can be

1 contributors to landslides. They can cause other sorts of
2 impacts, the types of events that we call a dam break flood,
3 geologists refer to as a dam break flood, where debris actually
4 clogs up the culvert, and it will fill up with water and fail
5 catastrophically.

6 Q These culverts, these are high-gradient culverts in steep
7 areas of terrain?

8 A Well, we have had both kinds of failures on the Olympic
9 Peninsula, and lots of them. The majority of them are probably
10 on the headwaters that are associated with logging roads.

11 Q And when you talk about logging roads, are you including in
12 that logging roads owned by the U.S. Forest Service?

13 A Yes, I am.

14 Q In fact, the U.S. Forest Service maintains 2,000 miles of
15 logging roads in the Olympic Peninsula; is that correct?

16 A I believe that is correct. They've made significant
17 abandonment progress in the last few years, though, so the number
18 may have dropped.

19 Q But in your opinion, the U.S. Forest Service is not doing as
20 good a job as the state in addressing their own barriers?

21 A Historically, that's been true. I think they're making some
22 progress now.

23 Q In your opinion, the State's program is better thought out
24 than the U.S. Forest Service?

25 A In terms of road abandonment?

1 Q As far as addressing their own barriers.

2 A I think the State's program is probably ahead of where the
3 Forest Service is, but I don't have recent data on the Forest
4 Service.

5 Q In your -- I think it's Exhibit 12 to your declaration, you
6 mention recent data that you've compiled regarding smolt
7 production in a pond you identify as E 3000?

8 A Yes. The South Fork Pysht River.

9 Q I'm sorry?

10 A It's a tributary to the South Fork Pysht River.

11 Q Thank you. In addition to the barrier removal that occurred
12 on that project, there was a lot of habitat restoration work done
13 as well; is that correct?

14 A There was about 300 feet of stream restructured.

15 Q I think that is a more accurate description. You separated
16 the road from the creek?

17 A Correct.

18 Q And then you created stream meanders?

19 A Yes.

20 Q And then you made a ditch into a creek, essentially?

21 A We rerouted what was called a ditch creek, because it was
22 right along a road, to separate it from the road, and created a
23 more natural channel.

24 Q And then you added wood to the habitat?

25 A Yeah. That was part of the plan.

1 Q And that resulted in drastic improvement in habitat quality?

2 A Yes. Habitat quality in that 300-foot reach was improved.

3 Q And all their work was paid for by SRF Board funding?

4 A That was a SRF Board grant, correct.

5 Q Now, you've only got, at least at the time of your
6 deposition, and it is my understanding that you had about four
7 years' worth of smolt production records on file. Is that
8 correct?

9 MS. FOSTER: Your Honor, I'm going to object. I think
10 the record -- that the exhibit speaks for itself.

11 THE COURT: It does.

12 But it's a fair area for you to ask him questions about.

13 Do you understand the question?

14 THE WITNESS: I do.

15 THE COURT: You may respond.

16 THE WITNESS: Yeah. The period of record includes eight
17 or nine years of data. But following the removal of the barrier
18 that blocked the most productive part of the habitat, there are
19 about four years of data, that is correct.

20 By Mr. Shaftel:

21 Q And you consider that to be a short-term data set that
22 doesn't -- it is not yet clear what that means with regard to
23 smolt production?

24 A I would say the trends are compelling. But statistically
25 speaking, as I said in my deposition, we need more years of data

1 to reach a statistical conclusion.

2 Q Now, you don't know anything about how many of these smolts
3 survive to become adults, do you?

4 A No. We have no way of knowing that.

5 Q You don't know anything about how this increase in smolt
6 production has impacted subsequent tribal harvest, do you?

7 A I do not.

8 Q Now, there is a number of jurisdictions that own barriers
9 within the LEKT usual and accustomed fishing areas; is that
10 correct?

11 A That is definitely correct.

12 Q And of all the jurisdictions, the state has the most
13 comprehensive inventory of its barrier contribution; is that
14 correct?

15 A I would agree with that.

16 Q And in fact, it's probably one of the only jurisdictions
17 that's making an effort to assess its habitat as well?

18 A Well, besides the tribe, yes.

19 Q And you are not critical of the State's efforts to inventory
20 its barriers, are you?

21 A I think they have made significant progress identifying their
22 barriers.

23 Q You don't have any problems with the methodology which they
24 are using?

25 A No.

1 Q You are also not critical of the design manual that they use
2 to design their corrected barriers; is that correct?

3 A The design manual appears reasonable; however, I am not an
4 engineer.

5 Q In fact, on design issues, you would defer to an expert in
6 the area of design, such as Bob Barnard of WDFW; is that correct?

7 A Yes. On the culvert replacements we work on, we either have
8 a contract engineer or an agency engineer involved.

9 Q In fact, you actually work with Bob Barnard on some of the
10 ones that you work with?

11 A Yes.

12 Q He has helped you design some of the very fixes you have
13 worked on; is that correct?

14 A He has.

15 Q So you have a pretty high regard for his expertise in that
16 area?

17 A I do.

18 Q Would you agree that the state is making the most progress on
19 the correction of its barrier contribution of all the
20 jurisdictions in your area?

21 A On identification or correction?

22 Q Correction.

23 A I see probably greater progress on private forest landowners.
24 I would say the rate of correction in our area is still pretty
25 slow.

1 Q DOT has fixed at least 11 culverts in the WRIAs 18 and 19;
2 isn't that correct?

3 A Well, it depends on how you define "fixed."

4 Q It has performed corrections at 11 different sites?

5 A Yes, and some of those have not passed muster with fish
6 passage, as I understand it.

7 Q And you mentioned private forest owners making progress. And
8 that is mostly done through the FFFPD program; is that correct?

9 A No. Those are the requirements of the Forest and Fish Act.

10 Q Are some of those corrected through the FFFPD program?

11 A No. Large industrial forest owners do not qualify for that
12 funding. It is dedicated to small forest landowners.

13 Q And that is who you are referring to as large industrial
14 forest owners?

15 A Yes.

16 Q These large industrial forest owners, they're just abandoning
17 their roads, in large part; isn't that correct?

18 A It would be a mix of abandonment and upgrades of the road
19 system.

20 Q And when they abandon a road, they just pull the culvert. Is
21 that how it works?

22 A Road abandonment -- it depends on the owner and what's being
23 abandoned. So there is the removal of culverts. There's also
24 sediment control, trying to put streams back into their original
25 drainage, erosion control.

1 Q You don't have a feeling for how much that costs, do you?

2 A No.

3 Q And you don't have a feeling for how much that costs in
4 comparison to the cost that it takes DOT to replace one of its
5 culverts?

6 A I am not a forest road engineer.

7 Q As a matter of strict money spent on its barrier
8 contribution, would you agree that the state is spending more
9 money correcting its culverts than any other jurisdiction?

10 MS. FOSTER: Your Honor, I'm going to object. I think
11 this goes beyond the scope of direct.

12 THE COURT: It is probably speculative. Objection
13 sustained.

14 By Mr. Shaftel:

15 Q There is strong progress being made towards salmon recovery
16 in the LEKT's usual and accustomed fishing places; isn't that
17 correct?

18 A We are making significant progress, yes.

19 Q There's now more systematic habitat restoration going on?

20 A Yes, thanks to the tribe.

21 Q And thanks to state funding?

22 A In partial, yes.

23 Q And there are better land use rules in place, particularly
24 with regard to forest practices; isn't that correct?

25 A The forest practice rules are improved over the previous

1 version.

2 Q And there's lots of unneeded roads that are being addressed,
3 as you just mentioned?

4 A I'm not sure I understand the question.

5 Q Lots of roads that are no longer needed are being abandoned
6 or otherwise dealt with, as far as their barriers?

7 A There is and has been significant road abandonment projects,
8 particularly on Forest Service ownership.

9 Q In fact, there is lots of barrier projects going on in the
10 LEKT U&A; is that correct?

11 A Lots of barrier projects, is that what you said?

12 Q Yes.

13 A Yes, there are barrier projects occurring.

14 Q There's lots of them occurring; is that correct?

15 A Can you define "lots"?

16 Q I don't know. It was a term -- no, I can't tell.

17 Would you agree with that statement?

18 A There are barrier corrections occurring in our U&A.

19 Q In fact, the whole sphere of activity conducted under salmon
20 recovery right now in the LEKT U&A is fairly impressive?

21 A That's an opinion, yes.

22 Q That's your opinion?

23 A We've got a good start on a lot of projects. There's a lot
24 of work to be done, though.

25 Q Do you agree with the opinion that I just expressed?

1 A Could you re-express that opinion?

2 Q There is a whole sphere of activity being conducted under
3 salmon recovery right now which is fairly impressive?

4 A Yes, I believe I said that. I agree with that.

5 MR. SHAFTEL: Thank you, Mr. McHenry.

6 THE WITNESS: Thank you.

7 THE COURT: Any redirect for this witness?

8 MS. FOSTER: Yes.

9 REDIRECT EXAMINATION

10 By Ms. Foster:

11 Q Good morning, Mr. McHenry.

12 A Good morning.

13 Q I believe counsel for the state asked you a number of
14 questions with regard to the barriers in the Salt and the Pysht
15 watersheds.

16 Can you tell us, please, whether or not the barriers that the
17 tribe has corrected in those two watersheds were tribal
18 barriers -- tribally owned barriers?

19 A None of the barriers were tribally owned.

20 Q And were some of those -- who owned the barriers that the
21 tribe has fixed?

22 A They were owned by the Department of Natural Resources,
23 Clallam County, and private landowners.

24 Q Now, counsel for the state has also asked you a number of
25 questions with regard to the limiting factors analysis for WRIA,

1 I think it was 19?

2 A 18 and 19.

3 Q 18 and 19. If I recall correctly, your testimony was that
4 they were completed in 1999; is that right?

5 A 1999 or 2000.

6 Q Since the time those particular limiting factors analyses
7 were completed, has the tribe or other scientists who were
8 working in this area developed any more recent information,
9 updated information that might change the conclusions of either
10 of those reports?

11 A I think there's some better information in some of the
12 watersheds, so, yes, I would say there's new information
13 available.

14 Q And in particular with regard to the number of barriers that
15 are in some of the watersheds of those WRIAs, has there been
16 additional information obtained?

17 A Particularly -- yes, in particular where watershed
18 assessments have been completed. And those places would be Salt
19 Creek, the Pysht River, and the Clallam River.

20 Q And has the tribe conducted any other watershed assessments
21 in either of those WRIAs?

22 A Not since the ones that we have previously discussed, no new
23 assessments.

24 Q But since 1999, when the limiting factors analysis --

25 A Yes.

1 Q -- were completed, has the tribe completed other assessments
2 besides the three you just named?

3 A Yes. There has been assessments completed in Deep Creek,
4 West Twin River and East Twin River, in addition to the others we
5 have talked about.

6 Q How about the Lyre River?

7 A The Lyre River does not have a watershed assessment.

8 Q Now, I believe counsel for the state has also talked with you
9 about other habitat restoration measures that the tribe has taken
10 or perhaps others have taken in WRIAs 18 and 19. And I believe
11 that you testified that the habitat issues needed to be addressed
12 beyond just addressing culverts, so I have a question for you.

13 Even though there are habitat issues that need to be
14 addressed, has the tribe, nevertheless, formulated a plan -- a
15 restoration plan that would prioritize the correction of culverts
16 in the usual and accustomed areas of the Lower Elwha Klallam
17 Tribe?

18 A Where we have conducted watershed assessment with an eye
19 towards a prioritized restoration strategy, yes.

20 Q I believe counsel for the state -- that you testified in some
21 areas there is degraded habitat above the blocking barriers in
22 WRIAs 18 and 19. Even in the watersheds that have degraded
23 habitat above those blocking culverts, will increasing the
24 habitat -- available habitat by opening those culverts
25 nevertheless increase salmonid production above those culverts?

1 A In my opinion, that's a true statement.

2 Q I believe counsel for the state also asked you a question
3 with regard to the survival of smolts to adults and that you
4 indicated you did not know how many smolts would survive to
5 adults.

6 I have a question for you with regard to that. Have you done
7 any analysis with regard to whether -- the survival from smolts
8 to adults in the watersheds that you have monitored?

9 A We're working on that analysis right now. We have a long
10 enough data set from some of our watersheds to begin putting
11 those numbers together, but that has not yet occurred.

12 Q So I take it, then, from your statement, that such an
13 analysis could be done?

14 A Yes. In particular where we have long-term smolt trapping
15 combined with adult escapement estimates.

16 Q Now, I believe that in your -- that with regard to the
17 inventory and the assessment of blocking culverts that has
18 been -- that you have conducted in the watershed assessments, can
19 you describe for the Court what tools you have used to conduct
20 the assessments, in terms of identifying barrier culverts?

21 A We use some -- we use primarily GIS, or geographic
22 information systems, that have existing data layers to identify
23 culverts. But we have used some new remote sensing techniques,
24 specifically one known as LiDAR, which is a laser imaging
25 technique, which results in very accurate digital elevation

1 models of the earth's surface. That has allowed us to identify a
2 lot -- additional habitats that aren't previously mapped or are
3 mapped incorrectly. So that's one tool that we have used.

4 Q To your knowledge, do you know whether or not in compiling
5 the inventories that the state has compiled, either DOT or DNR,
6 whether or not they have used the LiDAR technology?

7 A To my knowledge, they are not using it.

8 Q To your knowledge, Mr. McHenry, the SRF Board money that the
9 tribe has received to conduct some of the barrier corrections,
10 are you aware of the components of the SRF Board money between --
11 in terms of state and federal dollars?

12 A In general terms, I know it varies year to year, and I also
13 know there is a significant federal contribution to that SRF
14 Board pot of money. It includes both state and federal monies,
15 to my knowledge.

16 Q Now, with regard to AT-014-13, which is the chart concerning
17 smolt production, you testified earlier about some habitat
18 improvements that occurred along with the correction of the
19 barrier.

20 Do you have an opinion as to why there was an increase in
21 smolt production?

22 A I do.

23 Q And what is that opinion?

24 A I think improvements of the Ditch Creek habitat help, but a
25 larger factor was the opening up of the large forested wetlands

1 above the blocking culvert. That was five to seven acres in size
2 and has a very high potential for producing a lot of Coho salmon.

3 Q And prior to your opening the culvert, had you done some of
4 that restoration work in the Ditch Creek area prior to opening
5 that culvert?

6 A They happened simultaneously. The creek reroute was first,
7 and then the barrier correction, but it was all in the same
8 summer.

9 Q But after the reroute, did you see the same kind of an
10 increase in smolt production -- or excuse me, recolonization that
11 you did once you opened up the barrier?

12 A That's a difficult question to answer because our trap is at
13 the bottom of the system. That makes it hard to separate the
14 relative productivity, if I understand your question correctly.

15 Q So then can you explain to us why it is your opinion as to
16 the smolt -- the increase in recolonization was due to the
17 opening of the barrier?

18 A Well, it's pretty simple. You're talking about a 300-foot
19 reach of stream that's maybe three or four feet wide in abutted
20 width, versus a forested wetland that's five to seven acres in
21 size.

22 MS. FOSTER: I don't think I have any further questions
23 at this time, you Honor.

24 MR. MONSON: Your Honor, I may have a couple of
25 questions.

1 THE COURT: Thank you, Ms. Foster.

2 MS. FOSTER: Your Honor, I would, perhaps at the
3 conclusion of Mr. Monson's questioning, like to address once
4 again some of the exhibits pertaining to Mr. McHenry.

5 THE COURT: All right.

6 CROSS-EXAMINATION

7 By Mr. Monson:

8 Q Good morning, Mr. McHenry. My name is Peter Monson. I am
9 counsel for the United States in this case.

10 Counsel for the state asked you some questions about
11 comparing the state efforts with the federal efforts in the
12 Olympic Peninsula with regards to both decommissioning and
13 culvert removal and that sort of thing.

14 Do you recall those questions?

15 A I do.

16 Q And I believe you said something to the effect -- or you
17 agreed with Counsel's statement to the effect that the state had
18 done a better job than the U.S. Forest Service in that regard; is
19 that correct?

20 A That's correct, up until the last couple of years. I think
21 the Forest Service has stepped up substantially.

22 Q That was going to be my next question. Thank you.

23 Do you understand whether the Forest Service budgets have
24 increased with respect to culvert repair and replacement and road
25 decommissioning?

1 A In general, the Forest Service budgets have been battered
2 over the last several decades, so I don't know if the last
3 several years there's been an increase. I suspect there has,
4 just by the amount of activity I'm seeing.

5 Q All right. I'm going to show you a document and ask if you
6 recognize it.

7 A I have seen it once, I think.

8 No, I have not seen this document.

9 Q Have you seen this document before?

10 A I have not.

11 MR. MONSON: Just for the record, your Honor, this is
12 plaintiffs' exhibit USA 189.

13 By Mr. Monson:

14 Q One of the other questions I had for you is with respect to
15 road decommissioning. I believe that the photos on this cover
16 page are an example of that.

17 Would you agree?

18 A Yes. It appears to be a before and after road
19 decommissioning project.

20 Q Counsel for the state had asked you whether road
21 decommissioning simply meant pulling culverts out of the stream.

22 Do you recall that?

23 A I do.

24 Q Does the process in fact involve more than that?

25 A It can, yes.

1 Q Would these pictures be an example of that?

2 A Yeah. This appears to be a floodplain road abandonment.

3 Q And what would be involved in that process?

4 A You'd be looking at removal of the total road prism from the
5 floodplain and reforesting a riparian forest along the stream.

6 Q And that's more than just pulling the culvert?

7 A Oh, yeah. Not only pulling -- pulling a culvert will restore
8 fish access. This kind of project will restore a physical
9 process that promotes and supports habitat.

10 Q Thank you. Mr. McHenry, are you familiar with the Skokomish
11 watershed in the Olympic National Forest?

12 A I am familiar with that watershed, yes.

13 Q Are you familiar with the efforts the Forest Service has
14 accomplished in that watershed as reflected on Page 11 of Exhibit
15 USA 189?

16 A I have been hearing a lot about activities in the Skokomish,
17 but I haven't myself observed them.

18 MR. MONSON: Thank you. I have no further questions.

19 THE COURT: Ms. Foster, before you address the exhibit
20 issue, let me ask if the state has any additional questions based
21 on the USA's questions.

22 MR. SHAFTEL: Just on the USA's questions?

23 THE COURT: Yes, based on the questions asked of
24 Mr. McHenry.

25 MR. SHAFTEL: No, I don't believe so.

1 THE COURT: All right. Thank you.

2 Ms. Foster, before you get into the exhibits, let me ask a
3 couple of questions of this witness.

4 Mr. McHenry, understanding that I've not yet had a chance to
5 review your declaration, you've testified that habitat
6 restoration is a very complex thing. Prior to this litigation
7 beginning, the Lower Elwha Klallam Tribe realized that it needed
8 to do something to address these restoration efforts, correct?

9 THE WITNESS: Yes, sir.

10 THE COURT: As you have testified, and as the
11 cross-examination showed, there are many specific areas that
12 could have been addressed as part of that ongoing effort.

13 THE WITNESS: Yes, sir.

14 THE COURT: Given the obvious limitation that there are
15 insufficient funds to do everything necessary, your tribe decided
16 to go ahead and fix or address -- try to fix 17 barriers out of
17 the 31 that have been identified in this area?

18 THE WITNESS: In the Salt Creek watershed, that's
19 correct.

20 THE COURT: Out of all the things that could have been
21 done, why did they decide to try to fix the barriers as one of
22 their highest priorities?

23 THE WITNESS: Because when we did the watershed
24 assessment, we found that there were 50 miles of historically
25 active stream that salmon could access in this watershed, and

1 fully half that mileage was blocked by culverts of various
2 ownerships. So to us, we applied our scientific knowledge and
3 recommendations from the literature which indicated that when
4 you're going to restore a place like this, you need to go after
5 the barriers first.

6 THE COURT: In your expert opinion, that was the biggest
7 bang for your buck?

8 THE WITNESS: Yes.

9 THE COURT: Thank you.

10 THE WITNESS: Thank you.

11 THE COURT: Ms. Foster.

12 MR. FOSTER: Thank you, your Honor.

13 Yesterday, your Honor, the Court reserved ruling on AT-004
14 with regard to the last section of that particular report.

15 THE COURT: It was actually Pages 12 and 13, the culvert
16 correction success, that the state had objected to.

17 MS. FOSTER: Yes, that's correct.

18 THE COURT: After listening to the testimony, Counsel,
19 the Court will overrule the objection and will admit those
20 portions.

21 MS. FOSTER: Thank you very much, your Honor. I also
22 neglected to move for AT-084, which is a hydraulic permit
23 approval, during Mr. Wasserman's testimony, and would so move
24 now.

25 THE COURT: Is that AT-008-4?

1 MS. FOSTER: No. It's AT-084.

2 THE COURT: The Red Cabin Creek?

3 MS. FOSTER: Yes.

4 THE COURT: Any objection by the state to admission of
5 that exhibit?

6 MR. TOMISSER: We would object, your Honor, as untimely,
7 with no opportunity to question Mr. Wasserman about the document.

8 THE COURT: The objection is overruled. Exhibit AT-084
9 will be admitted.

10 MS. FOSTER: Thank you, your Honor.

11 THE COURT: Mr. McHenry, thank you. You may step down.
12 You may call your next witness.

13 MR. STAY: Thank you, your Honor. We would call
14 Dr. Martin Fox.

15 THE COURT: Good morning, Dr. Fox. I'll have you raise
16 your right hand to be sworn.
17 Whereupon,

18 MARTIN FOX

19 Called as a witness, having been first duly sworn, was examined
20 and testified as follows:

21 THE CLERK: Please state your name and spell your last
22 name for the record.

23 THE WITNESS: My name is Martin Fox, M-A-R-T-I-N, F-O-X.

24 THE COURT: Dr. Fox, there's water on your left if you
25 should need it.

You may inquire.

DIRECT EXAMINATION

By Mr. Stay:

Q Dr. Fox, where are you employed?

A I'm employed with the Muckleshoot Indian Tribe.

Q And what are your responsibilities with the Muckleshoot Indian Tribe?

A Namely my job duties revolve around permit review of projects, conducting science and field data to formulate comments and recommendations on various projects.

Q Do those projects involve road projects?

A Yes, some do.

Q And what is involved in your examination of a road project, in terms of your job responsibilities?

A If a road project crosses a stream, I will go out in the field and measure the physical conditions of the stream and make recommendations if a culvert is needed and make recommendations for a culvert that will best pass salmon as well as woody debris, and maintenance of channel processes.

Q What percentage of your work time is spent in the field?

A It varies, but I would say roughly 20 to 30 percent.

Q And what is your educational background?

A I have a Bachelor's of Science from the University of Washington in fisheries biology. I have a Master's of Science in forest hydrology and engineering from the University of

1 Washington, and a Doctor of Science in forest hydrology and
2 engineering, also from the University of Washington.

3 MR. STAY: I would like the clerk, if you would, to hand
4 to the witness three exhibits, AT-001 and AT-001-2 and AT-001-3,
5 which should be all together.

6 By Mr. Stay:

7 Q Do you have those, Dr. Fox?

8 A Yes.

9 Q Dr. Fox, did you prepare a Declaration of Direct Testimony in
10 Lieu of Testimony for this proceeding?

11 A Yes, I did.

12 Q And when you are looking at AT-001, can you identify that for
13 the Court, please?

14 A This is my declaration.

15 Q And is your signature on that declaration?

16 A Yes, it is.

17 Q Is there testimony or a report attached to that declaration?

18 A Yes.

19 Q And what is the title of that?

20 A "Evaluation of Design Standards for Culverts."

21 Q Did you prepare that report, "Design" --

22 A Yes, I did.

23 Q Did you prepare that for this litigation?

24 A Yes, I did.

25 Q Did you intend that that declaration and report be your

1 direct testimony in this case?

2 A Yes.

3 Q Do you adopt that now as your direct testimony?

4 A I do.

5 Q I would like you to also look at AT-001-2.

6 A Okay.

7 Q Can you explain what that exhibit is, AT-001-2?

8 A This is a summary of culverts that I assessed that the state
9 had deemed fixed by their progress reports of 2005. It's a
10 summary of my assessment as to whether or not these culverts
11 could pass fish - juvenile fish, namely - at an array of flows
12 through those culverts.

13 Q Is there an attachment dealing specifically with Pussy Foot
14 Creek? It should be attached.

15 A Yes.

16 Q What was the purpose served by AT-001-2?

17 A I believe this was a correction.

18 Q What was the nature of the correction?

19 A This particular culvert, the units were in metric and
20 mistakenly converted -- mistakenly processed in English units.
21 So the corrections were made to those data, and the array of
22 metrics that were associated with that correction was
23 reprocessed, and this was resubmitted.

24 Q Were there any other changes made except from English to
25 metric?

1 A No, I don't believe so.

2 Q Did it in any way affect your analysis?

3 A No.

4 Q There is also an exhibit attached, AT-001-3.

5 Do you see that?

6 A Yes.

7 Q Is that an e-mail or series of e-mails?

8 A Yes.

9 Q And they are between myself and counsel for the state, Fronda
10 Woods?

11 A Yes.

12 Q And what do those e-mails purport to say?

13 A The same. The data for one culvert, Pussy Foot Creek, was
14 mistakenly processed in metric units; whereas field data were
15 actually collected in English units.

16 MR. STAY: Your Honor, I would move the admission of
17 AT-001, AT-001-2, and AT-001-3. I believe that AT-001-1, his
18 resume, has already been admitted without objection.

19 THE COURT: Any other objections by the state other than
20 the ones that are listed in the pretrial order?

21 MS. WOODS: I would like to clarify the ones that are
22 listed in the pretrial order. There were objections to two
23 figures. We have resolved those and will withdraw those.

24 The other objections to the exhibits were the subject of our
25 motion in limine, and we still wish to preserve those objections,

1 but the Court has ruled on them.

2 THE COURT: Understood. And you're exactly right. The
3 Court has addressed those in the motions in limine. Therefore
4 001, 1-2 and 1-3 are admitted.

5 MR. STAY: Thank you, your Honor.

6 By Mr. Stay:

7 Q Dr. Fox, are you familiar with the various culvert correction
8 design methods?

9 A Yes, I am.

10 Q What are they, the ones commonly used?

11 A Commonly used are the no-slope design, the hydraulic design
12 method, and stream simulation option.

13 Q Can you describe for the Court, please, what is involved in
14 the no-slope design?

15 A In general, the no-slope is a culvert that sits flat in the
16 stream channel, no slope. It's typically sized to the bankfull
17 channel. The bankfull is defined as an ordinary high-flow line
18 that's generated typically once every one and a half years.
19 There's indicators on the banks that provide those estimates of
20 when bankfull flow is. It's common flow. Also bankfull can be
21 defined as when the flow levels begin to -- before they spill out
22 onto the floodplain. So it's a feature that's delineated in the
23 field.

24 The no-slope culvert is designed to accommodate the bankfull
25 channel.

1 Q Dr. Fox, for those of us who did not quite have as much
2 education as you, is that basically your ordinary high water?

3 A Yes. That's synonymous, particularly to confined channels.

4 Q How does the no-slope method perform in passing fish?

5 A It can pass adults and juveniles at low flows. But as soon
6 as flows reach above bankfull capacity, the culvert becomes a
7 constriction. And when that occurs, the flows are forced through
8 a narrower aperture than otherwise would occur in the natural
9 stream and accelerates the water velocity. When that occurs, it
10 oftentimes exceeds the swimming ability of fish, particularly
11 juveniles.

12 Also, the no-slope can have sediment deposit at the inlet,
13 which will also create a constriction to the aperture and
14 accelerate water velocities.

15 Q Can you describe for us, please, the second one you
16 mentioned, the hydraulic method?

17 A The hydraulic method is designed mostly around water
18 velocity. The target species for the hydraulic culvert is a
19 six-inch trout, which is able to navigate flows up to four foot
20 per second, which is exceeding the ability of the juveniles. So
21 it's strictly a model-based design, and it does not consider
22 adequately when the channel configuration changed through flood
23 flows and other geometric processes that may move that channel to
24 a different configuration than originally assessed.

25 Q I want to call your attention to Page 28 of your declaration,

1 Figure 17, which I've now put onto the screen.

2 Do you see that in front of you?

3 A Yes, I do.

4 Q Can you describe for the Court what Figure 17 purports to
5 represent?

6 A This is a summary of the literature pertaining to juvenile
7 salmon swimming abilities, namely Chinook and Coho juveniles.
8 And each data point here summarizes the array of literature on
9 the maximum feet per second or velocity that these juveniles can
10 navigate through a culvert.

11 What we have here is a line depicting -- this line -- this
12 line right here -- my pen is not tracking correctly.

13 Q The lower line?

14 A Yes. The lower red line is a summary of those water
15 velocities, around one foot per second. I would point out that
16 the Washington Department of Fish and Wildlife, NOAA fisheries,
17 also has very similar assessments in their literature base of one
18 foot per second.

19 The upper line appears to be the state standard for the
20 hydraulic method, which is four feet per second. So you can see
21 that it exceeds, in all these literature cases, the abilities for
22 juvenile salmon to navigate through those culverts.

23 Q Thank you, Dr. Fox.

24 Going on to the third method you identify, the stream
25 simulation method, would you describe to the Court how that

1 works?

2 A The stream simulation, the intent of that design is to mimic
3 the natural stream as much as possible, with the assumption that
4 if fish can pass through the natural stream channel, they should
5 also be able to pass through this culvert.

6 The basis of the design is to size the culvert to 1.2 times
7 the bankfull width, plus an additional two feet. So the culvert
8 is essentially wider than the bankfull channel.

9 Q How does the stream simulation method do in passing fish?

10 A The stream simulation method is the best of the three design
11 options because it affords a wider aperture to pass the stream,
12 particularly for flows that are even greater than the bankfull.
13 It affords the widest range of flows for juvenile passage, and it
14 is assumed that fish can pass through the culvert with those
15 flows. There's no hydraulic modeling to determine that, so the
16 channel behaves in a more natural manner than the other two
17 methods.

18 Q I want to direct you to Page 22 of your exhibit, and that
19 will be Figure 13, and that's been put on the screen for you.

20 Can you tell us what that purports to show, please?

21 A Back up to stream simulation, one of the advantages of stream
22 simulation is that as flows rise within the culvert, there's
23 always going to be a margin area up to flows around the ten-year
24 flood recurrence interval.

25 And when you have channel margins, you have areas of slow

1 velocity that can better facilitate salmon passage. Here's an
2 example of Pink salmon using the channel margin to navigate
3 upstream. Juveniles respond in a similar behavior, where they'll
4 find the slowest velocities within the stream channel to expend
5 less energy and to better facilitate their upstream passage.

6 The same goes for a culvert. If you have these margin areas
7 along the edges or in other locations, fish will use those areas
8 to pass upstream.

9 Q Of the three methods that you've described, which method is
10 most likely to provide those margin areas within a culvert?

11 A The stream simulation, since it is wider than the bankfull
12 channel, will afford a greater range of discharges that encompass
13 a margin area -- margin component.

14 Q Have you attempted, Dr. Fox, for this case, to look at stream
15 simulation or culverts, or culverts close to stream simulation to
16 determine how they actually do in the field?

17 A Yes.

18 Q And why did you do that? Why did you undertake that study?

19 A I wanted to evaluate the performance for fish passage, namely
20 through stream simulation, culverts, or culverts approaching
21 stream simulation, to evaluate the efficacy of using that design
22 option.

23 Q Did you want to compare it with anything else?

24 A Yes. I compared them to culverts that were not designed for
25 stream simulation, namely narrower culverts, perhaps using the

1 hydraulic and the no-slope design methods.

2 Q How did you conduct that? What was your methodology that you
3 used?

4 A With my population of culverts that I assessed, I attempted
5 to determine which ones met the stream simulation design
6 criteria; namely, the gradient requirements and mostly the width
7 requirements, which is the 1.2 times the bankfull width plus two
8 feet. The culverts that met that width definition would thus
9 qualify as stream simulation.

10 Unfortunately, the population of the sample I had only had
11 one culvert that met that true definition. So I did a surrogate
12 approach, where I found that culverts that closely -- more
13 closely met the stream simulation definition. And I adopted Bob
14 Barnard's study protocol, where he looked at culverts that had a
15 culvert-to-channel width ratio of .8 to 1.6 based on the culvert
16 width divided by the bank width.

17 So a culvert width to bed width that were equal would have a
18 ratio of one. Anything less than one, the culvert is smaller or
19 narrower than the bankfull width. A ratio greater than one would
20 be larger than the channel. So I adopted that range for my
21 criteria to evaluate culverts that were near stream, or in other
22 words, compared wider culverts to smaller culverts.

23 Q And did you have results from that study?

24 A Yes.

25 Q And what were your results?

1 A Well, I looked primarily at water velocities through these
2 culverts, both field measured and modeled, using standard
3 hydraulic relationships. And I found that the wider culverts, or
4 the ones approaching stream simulation, consistently performed
5 better in terms of providing less increase in water velocities as
6 compared to natural stream channel. So there was more
7 opportunity for lower flows, channel margin areas and -- or I
8 should say lower velocities to enable fish passage more of the
9 time.

10 Q I would like to show you or direct you to Page 39 of your
11 declaration, and Figure 19, which has now been put up on your
12 screen.

13 Can you look up at the screen, and can you describe for the
14 Court what that Figure 19 purports to represent?

15 A Yes. This is the summary of my comparison to culverts that
16 were near-stream sim, or the wider culverts, as I have labeled
17 here, as stream simulation, but it's actually not true stream
18 simulation but the closest thing I could find to it, as compared
19 to non stream simulation culverts or the narrower culverts.

20 This is a summary of the velocities, the percent increase in
21 velocities that the culvert induced as compared to the natural
22 stream channel adjacent to that culvert. So in all cases, the
23 culvert increased the water velocities as compared to natural
24 stream; however, as depicted by each of these bars, as it's
25 greater than 0. The culverts that were wider, the near-stream

1 simulations in all cases outperformed the non-stream simulation
2 culverts consistently.

3 The wider culverts had less increase in water velocities as
4 compared to the narrower culverts. And because of that, there's
5 better opportunity for fish, particularly juvenile fish, to be
6 able to navigate through those culverts because of those lower
7 water velocities.

8 Q From the work you did, and given the fact, Dr. Fox, that you
9 did not have true stream simulation culverts to work with, could
10 you draw any conclusions as to what the result would be if stream
11 simulation culverts had in fact been part of your --

12 A Yes. I would expect that it would follow this trend; that it
13 would outperform the non-stream simulation culverts and the
14 narrower culverts to an even greater degree.

15 Q Dr. Fox, did you undertake a field evaluation of culverts
16 which were identified by the state as being corrected?

17 A Yes, I did.

18 Q And what was the purpose of your taking that on?

19 A I wanted to evaluate culverts that the state had deemed
20 corrected for fish passage.

21 Q And what was your methodology? What methodology did you use?

22 A I adopted methods from the state's culvert assessment
23 protocol. I used methods from the Forest Service; Ernest,
24 et al., fish crossing protocol; and also using hydraulic
25 relationships established in the literature.

1 Q Did this study involve actual fieldwork?

2 A Yes, it did.

3 Q Tell us what you did.

4 A I guess if I go back to the sample of culverts -- I will talk
5 about the protocol for my assessment. I went out in the field
6 using a total station, which is an electronic laser tool that
7 plots spatial points with a high degree of accuracy. I measured
8 the velocities in the stream as a measure of calculating
9 discharge. I also assessed other physical features of the
10 culvert, such as where there's a vertical drop at the outlets,
11 where there's adequate flows at the time of the survey, and other
12 features that might impose barriers.

13 The data was then processed and velocities were calculated to
14 the culvert to assess whether there's a velocity barrier in each
15 pipe.

16 Q Let's step back one moment. What was your sample size?

17 A The sample size was 28 culverts.

18 Q And where did you derive that sample size, from what source?

19 A Using the 2005 progress report from Washington Department of
20 Transportation, Washington Department of Fish and Wildlife, they
21 have tables that depict culverts that the state has deemed were
22 corrected through safety mobility projects, road projects, or
23 dedicated barrier removal projects.

24 So drawing from these tables, I sorted them in terms of which
25 culverts fell within the case area and also which culverts had

1 been corrected to the most modern design standards as afforded in
2 the state culvert manual, which is Bates, et al., first version,
3 '99, second version in 2003.

4 So culverts from 1999 on, I assessed as being eligible to
5 qualify as the most current state-of-the-art method that the
6 state uses to correct culverts, that the state had deemed were
7 corrected for fish passage.

8 Q Did you look at culverts throughout the case area or just in
9 places where Muckleshoot fishes?

10 A Throughout the case area. Every culvert that met that
11 criteria, I evaluated.

12 Q Did you leave any culvert corrections out that met that
13 criteria?

14 A No. In fact, there was 27 of them from the table, and I
15 added another one from another program that the state had
16 corrected up in the Nooksack. So 27 from this report and another
17 culvert from another correction program in the Nooksack system.

18 Q I want to draw your attention, please, to Figure 19 on
19 Page 39. Let's go on to Page 69. My mistake.

20 Before we get to that diagram - I put it on the screen for
21 you, Dr. Fox - can you tell us what your results -- or did you
22 come to any results or conclusions from your study of currently
23 identified state culvert corrections in the case area?

24 A In summary, most of the culverts that were supposedly
25 corrected did not have a correction that applies to the full

1 range of flows. Typically, at bankfull flow and sometimes less,
2 the velocities exceeded the abilities for juveniles to pass, so I
3 would not consider that the majority of them were in fact
4 corrected for juvenile fish passage.

5 Q Did you find any that were?

6 A There were a few, yes.

7 Q Now I want to go to the graphs which are on your screen now.
8 That says Camp Creek US 12, Milepost 12.48. And tell us, what is
9 this set of graphs?

10 A This is a summary of my analysis for each culvert. For each
11 culvert, I performed a similar type of analysis and produced a
12 summary set of graphics to help tell the story of each culvert,
13 how it performed in terms of fish passage.

14 These figures are more closely related to the barriers
15 associated with water velocity. In the upper left-hand graphic,
16 I have a comparison of the profiles of the stream channel, which
17 is depicted by this line here, as compared to the profile of the
18 culvert. This is a double barrel culvert, or actually two boxes.
19 And that's why it has that line through the middle, to display
20 that.

21 So what we see here is that the culvert is approximately half
22 as wide as the bankfull channel as compared to approximately
23 these locations. You can see -- this is a good example of where
24 you can actually see the point at which the flows will spill out
25 onto the floodplain, as defining the bankfull channel. So from

1 these points here, we can define bankfull width, whereas the
2 culvert you can see is less than half of that.

3 Q And what do the bottom two graphs depict?

4 A This graph is a --

5 Q Which is "this graph"? You have to be clear. Left or right?

6 A Right here, the left side, is a depiction of the
7 cross-sectional area of the stream channel as we displayed in the
8 upper graph here. In this case, I've routed the water surface
9 elevations for an array of flows through that stream channel, as
10 depicted by each of these lines. And so as we progress upwards
11 in the stream channel, we have a water surface elevation of these
12 flows.

13 And these flows are represented by the design flow, which is
14 the design plus standard error, and the flood possibilities from
15 the two to the 100-year recurrence intervals, or a 200-year
16 flood. And this depicts where in that channel that water surface
17 elevation would rise. This is based on measurements taken in the
18 field and hydraulic relationships.

19 And we compare this to the graphic on this side, which is --
20 the same water surface elevations routed through the culvert.
21 And what we see is - this is typical - is the water surface
22 elevations or the flows will rise vertically along the culvert
23 walls as flows get higher; whereas on the stream channel, they
24 can spill out onto the floodplain at those higher flows. So
25 there's more opportunity for these channel margin areas to occur;

1 whereas in the culvert, there's no opportunity for channel
2 margin.

3 This is fairly typical. This is a good example of a common
4 observation. And what this means in terms of water velocity,
5 when culverts are constricting those flows and it rises
6 vertically along the culvert walls -- the culvert walls are
7 relatively smooth, and they offer little roughness or -- little
8 ability to slow that water velocity down. And when that happens,
9 the water velocities accelerate.

10 And this graphic in the upper right here is a summary of
11 those velocity comparisons where, in the lower velocities, we
12 have fairly similar comparisons between the culvert and the
13 stream because, as the flows rise up in the stream channel, it
14 has much contact with the bed of the culvert. However, as they
15 rise further up in there, we have an acceleration of water
16 velocities. And in this case, it results in a divergence of
17 those water velocities.

18 In this case, we see that the water velocities within the
19 stream channel, which is depicted by the blue line here, we have
20 a divergence where it actually slows down or maintains less than
21 two feet per second, which is considered passable for juvenile
22 fish; whereas in the culvert environment, it accelerates beyond
23 that. And the reason is because, as the water spills out onto
24 the floodplain, it encounters more of those roughness features
25 such as trees and shrubs and things that slow those water

1 velocities down, providing that margin area so that fish can get
2 through those culverts or through the stream corridors.

3 Q Dr. Fox, this Camp Creek was one of the area culverts you
4 actually surveyed. Am I correct?

5 A Yes.

6 Q Did you encounter any evidence of the problem of velocities
7 with juveniles as you were actually surveying?

8 A As a matter of fact, on this culvert, I did. As I mentioned,
9 I went out to each culvert at least twice, and the purpose was to
10 measure a low to moderate flow and then to try to capture a high
11 flow to help calibrate my hydraulic relationships.

12 Out there, during the high-flow period, I observed a juvenile
13 Chinook refuge in the velocity shadow of this center meeting, I
14 guess, of the culverts, trying to maintain position. The Chinook
15 was attempting to navigate through the culvert, but the
16 velocities were too great for him. And the flow that I was out
17 at was at near a bankfull discharge. And in fact, the juvenile
18 Chinook would dart from the median of this culvert to behind my
19 waders or my velocity rods, trying to find some sort of velocity
20 refuge, and eventually he succumbed to exhaustion, and I watched
21 him get swept downstream. This is only at a moderate discharge,
22 which is actually a two-year discharge, right in here, which is
23 approximately this level right here.

24 At greater levels, we would expect that ability to be even
25 less for juvenile fish, and perhaps even adult fish cannot get

1 through.

2 Q I want to bring you to Page 18 of your report, and Figure 9.
3 You have been talking a lot about velocities, high velocities and
4 low velocities, etcetera.

5 Can you tell us what Figure 9 purports to represent?

6 A Yes. This is a summary of salmon timing; in other words,
7 when they are in the stream, the fresh water environments,
8 throughout the course of the year. I look at three different
9 life history stages or periods. I have adult migration when they
10 are actually spawning in the system. I look at juvenile rearing
11 and also juvenile migration. Juvenile rearing is the freshwater
12 stage, where they are accumulating weight and trying to increase
13 their ability to survive when they hit marine environments, Coho
14 being the species that resides within the freshwater environment
15 for a full year before they migrate out. Stream-type Chinook do
16 the same.

17 So the red bars indicate the presence of juveniles. The blue
18 bars indicate the presence of adults. So just from that
19 information alone, you can see where there are salmon in the
20 streams at all periods of the year.

21 The black bar here represents a typical hydrograph of lowland
22 Puget Sound. I summarized 12 stream gauges, and this depicts
23 when the probability for flood flows is the greatest, which is
24 the highest in December and January. But we can get flood flows
25 in November. I think November 2006, we had a 25-to-100-year

1 event. And spring flows of 2007 were great because of the large
2 snow pack. So we can get these any time of year, but this is
3 fairly typical.

4 But what this illustrates is that during the peak of flood
5 flows, as typically occurs, we will have juvenile salmon within a
6 system, namely Coho. So they're subject to those high flows.
7 And so culverts need to be designed to accommodate those high
8 flows in order to pass juveniles that need to get through those
9 culverts.

10 Q Dr. Fox, are those Coho that are in those rivers at that
11 time, are they migrating upstream as well as downstream?

12 A Yes. Juveniles will reside in the stream. Numerous reports
13 in the literature - Scarlett, Cederholm '82; Peterson, et al. '82
14 - a numerous array of studies, suggest that juveniles will move
15 upstream into these tributaries during the onset of winter flows
16 or high flows to escape the high velocities that might displace
17 them downstream and the turbidity associated with it.

18 Lowry 1965, I think reported that fish will continue to move
19 upstream as flood flows get greater to find those refuge areas.
20 If they're displaced downstream, they may be subject to
21 predation, inhospitable habitats or some other intolerable
22 feature and perhaps even get swept into the estuaries before
23 they're ready to be there. As a result, the mortality is
24 increased.

25 THE COURT: Counsel, let's go ahead and take our morning

1 recess.

2 MR. STAY: Thank you, your Honor.

3 (At this time a short break was taken.)

4 THE COURT: Mr. Stay, you're still on direct
5 examination.

6 MR. STAY: Thank you, your Honor.

7 By Mr. Stay:

8 Q I'd like to go back to Page 69, the graphs on Camp Creek,
9 just for a couple of followup questions, if I might. In the
10 lower left-hand corner, you have a series of flows. One is
11 Q-100. That's a 100-year flow?

12 A Yes.

13 Q Is that a flow that occurs every 100 years?

14 A The probability that that flow will occur once every 100
15 years, and that's based on current period of record -- of gauge
16 records. With climate change, other variables, it might affect
17 the frequency of those floods.

18 For example, we've had a 100-year flood in portions of the
19 state over the last four years. And so a 100-year flood is
20 actually a probability of how often it can occur over a time
21 period, but it could occur back-to-back years. It's possible.

22 Q Dr. Fox, in the upper right-hand corner, you indicate in your
23 testimony that two feet per second was a velocity that could pass
24 fish.

25 Why is that?

1 A Yes. I should qualify that approach. The array of
2 literature that I pointed out earlier depicted juveniles to be
3 able to safely navigate up to one foot per second, and less.
4 There was a study by Powers and others, et al., 1997, that found
5 that the boundary layer or the layer of water closest to the
6 streambed or culvert walls produced some slower water velocities
7 that enabled fish to pass at a little overall at greater average
8 velocity. He found that, up to two feet per second, juveniles
9 could navigate if there was a roughened surface within the
10 culvert. And so I used two feet per second as my criteria when
11 juveniles can pass upstream through a culvert.

12 Q One final followup question. When you were talking about
13 your study design for stream simulation, you mentioned a person
14 named Mr. Barnard?

15 A Yes.

16 Q Who is Mr. Barnard?

17 A Bob Barnard is an engineer for the state Fish and Wildlife.

18 Q What is your opinion of Mr. Barnard?

19 A I think he is an excellent engineer.

20 Q Just one last area, and then I will sit down.

21 Dr. Fox, can wood in a stream affect a culvert?

22 A Yes, it can, in several facets. Wood is directly related to
23 the productivity of a stream, a particular -- particularly fish
24 production.

25 In fact, there's such a strong correlation that wood is often

1 used as an indicator of quality of habitat. So wood is an
2 important feature up the stream. When wood is routed downstream
3 through entrainment processes, it can impinge an inlet of the
4 culvert if the culvert is too narrow to be able to pass the piece
5 of wood. As a result, it can hang up on the inlet and restrict
6 that aperture.

7 In this case, in the upper photo of Figure 6 --

8 Q Just a second, Dr. Fox. I've put onto the screen Page 13 of
9 your declaration, Figures 6 and 7. You were indicating Figure 6,
10 am I correct?

11 A Yes. Here's an example of small debris impinged at the inlet
12 of a culvert because the culvert was likely too narrow to pass
13 this material. In this situation, it's likely that the aperture
14 of the inlet was restricted by the piles of wood here and, as a
15 result, forced the water to flow through a narrower aperture.
16 And when that occurs, the water velocities are accelerated,
17 providing fish less able to pass upstream.

18 Q I didn't mean to interrupt.

19 A I was going to expound on the impacts also associated with
20 that to habitat. The nature of the interception of wood at these
21 culverts also then, in turn, deprives downstream habitats of this
22 wood, which is an important geomorphic feature for forming pools,
23 storing gravel, providing cover, food sources for fish.

24 So if you have multiple culverts in a system, you are
25 potentially subject to impeding the transport of wood through the

1 system and providing those habitats downstream. The maintenance
2 programs from crews that remove this wood, it can end up on the
3 banks, in other words, out of the system, or in a better scenario
4 they move it to the downstream side of the culvert, which is the
5 next best thing.

6 But the processes that form those pools and store those
7 gravels occur during those high-flow events. If it is moved
8 downstream, we have to wait until the next high flow for that
9 piece of wood to perform those same sort of functions. So it is
10 a surrogate.

11 The best approach to dealing with wood is having a culvert
12 that can pass the wood freely and unimpeded during these
13 high-flow events.

14 Q Looking at Figure 7, how does that relate to your last
15 statement?

16 A Figure 7 is an example of two forms of inhibiting the
17 recruitment of wood or the passage of wood. We have a log that
18 is -- or a tree that fell and, rather than falling into the
19 stream, has landed on top of the culvert. That is one form of
20 interception. And down below we have wood that is hung up on the
21 inlet and impeded from being routed downstream.

22 Q I want to put up on the screen one last part of your
23 declaration. Page 11, Figure 7. I would like you, Dr. Fox, to
24 look at Page 16 of your declaration.

25 Do you have that in front of you? That is a pie graph. Am I

1 correct?

2 A Yes.

3 Q And what does that depict?

4 A Actually, this is the graphic I borrowed from Bob Barnard's
5 assessment for our culvert training slide show. And this is a
6 graphic from a Forest Service document that assesses the
7 proportion of road failures with an array of processes.

8 We have 61 percent of the road failures associated with woody
9 debris piling up at the inlet of the culvert. The vast majority
10 of road failures by this study are associated with the inability
11 of that culvert to be able to pass wood downstream.

12 Q How does that affect fish survival?

13 A Well, as the points that I've mentioned, if it constricts the
14 aperture of the culvert, it can accelerate those water velocities
15 to speeds too great for fish to travel, particularly juveniles.

16 Also, another facet is it affects habitat by, for one,
17 depriving the downstream area of wood. But if you constrict the
18 aperture so much that even the flow can't get through, what
19 happens is the road fails altogether and you have a torrent of
20 debris and sediment that is catastrophic to the downstream
21 habitats. It can route for perhaps the whole length of that
22 tributary until it reaches the mouth of that tributary, and it's
23 devastating on the habitat. It's a process for sure that should
24 be avoided if at all possible.

25 MR. STAY: Thank you, Dr. Fox. I have no more

1 questions.

2 Thank you, your Honor.

3 THE COURT: Ms. Woods, cross-examination.

4 CROSS-EXAMINATION

5 By Ms. Woods:

6 Q Good morning, Dr. Fox.

7 A Good morning.

8 Q I am Fronda Woods, assistant attorney general for the State
9 of Washington. I took your deposition a couple of times this
10 year.

11 Do you recall that?

12 A Yes, I do.

13 Q And do you recall earlier in this litigation when Steve
14 Dietrich took your deposition a couple of times?

15 A Yes, I do.

16 Q You are one of the lucky people who has had four depositions
17 in this case. You have described in your direct testimony, in
18 part, an overview of the State's design methodologies for
19 correcting culverts; is that right?

20 A Yes.

21 Q Are those design methodologies described in the Washington
22 Department of Fish and Wildlife Design Manual of Road Culverts
23 for Fish Passage?

24 A Yes. From Bates, et al.

25 Q You reviewed that manual when you prepared your testimony,

1 did you not?

2 A Yes, I did.

3 Q I will be referring to it a bit this morning. It's one of
4 the exhibits that was read off this morning as a joint exhibit,
5 W 089-B. I do have some slides, but it might be helpful if you
6 have that in front of you.

7 MS. WOODS: So if the courtroom deputy could please hand
8 that to Dr. Fox.

9 THE WITNESS: Sorry. W 008-B?

10 By Ms. Woods:

11 Q W 089-B.

12 A Okay.

13 Q And also, Dr. Fox, have you reviewed the declaration of Bob
14 Barnard?

15 A Yes, I have.

16 Q Did you review the slides that went with that declaration?

17 A Yes.

18 Q Mr. Barnard is one of the contributing authors of Bates,
19 et al., the WDFW design manual, is he not?

20 A Yes, he is.

21 Q I believe you described in your direct testimony that stream
22 simulation is the best of the State's design methods?

23 A Yes, it is.

24 Q Do you know who developed that method?

25 A Bob Barnard, I believe, had the most hand in that

1 development.

2 Q As you described in your testimony, there are three methods
3 in the WDFW design manual of culvert design?

4 A Yes.

5 Q Those are the no-slope, hydraulic, and the stream simulation
6 methods?

7 A Correct.

8 Q Let's take a little look at the no-slope method. In your
9 paper, that is ET-001. Let's turn to Page 25.

10 A Okay. I believe I am in the right place.

11 Q Is it Pages 25 and 26 where you discuss the no-slope method?

12 A Yes.

13 Q As you understand it, the state's no-slope design parameters
14 relate to channel width, countersinking, and a level pipe; is
15 that right?

16 A That's the basics of it, yes.

17 Q Countersinking means the bottom of the culvert is buried
18 below the streambed; is that right?

19 A Yes.

20 Q I am going to show you a slide from Bob Barnard's
21 declaration. Mr. Barnard has not testified yet, so this is not
22 in evidence yet, but it is my understanding that plaintiffs are
23 not objecting to this particular slide.

24 MR. STAY: We have no objection, your Honor.

25 THE COURT: Thank you.

1 By Ms. Woods:

2 Q Dr. Fox, you have reviewed this slide, have you not?

3 A Briefly this morning, when you submitted it.

4 Q This slide appears to depict a no-slope culvert; is that
5 right?

6 A Without measuring it in the field, I can't determine whether
7 this is truly meeting the definition of no-slope. It appears to
8 be labeled as no-slope. That's all I have to go on.

9 Q It has some numbers in there, 40 percent and 20 percent; is
10 that right?

11 A According to the slide, yes.

12 Q Now, the no-slope design method has some countersinking
13 requirements, I believe you said; is that right?

14 A Yes.

15 Q And it is 20 percent minimum at the downstream end; is that
16 right?

17 A Yes.

18 Q And the countersinking is 40 percent maximum at the upstream
19 end; is that right?

20 A That's the way the method is written, yes.

21 Q This culvert depicted in the slide on the screen appears to
22 be a circular culvert, does it not?

23 A Yes.

24 Q Where would you measure the diameter of this culvert?

25 A I would measure, for the culvert diameter, probably right

1 through the center here, if I was to create a line here, to
2 assess the diameter.

3 Q It's a straighter line than I would likely draw. The
4 streambed is not located at the diameter line, is it?

5 A That's true in this graphic, yes.

6 Q So the streambed in this culvert is not at the widest part of
7 the culvert, is it?

8 A Well, at this flow, it is certainly not at the widest portion
9 of the culvert. But at higher flows, it can rise to higher
10 elevations and then be at the widest level.

11 Q Let's say that the stream in the culvert in this photo is
12 five feet wide. The diameter of the culvert must be more than
13 five feet; isn't that right?

14 A If it is designed for a no-slope, the bankfull width equates
15 to the width of the culvert.

16 Q This culvert we see on the screen has the stream not located
17 at the widest point; is that right?

18 A I'm not sure I follow your question here. We appear to have
19 a low flow right in through the culvert. What I observe just
20 from this photo is there's a rust line at approximately this
21 point here that would suggest an ordinary high flow is wider than
22 the stream channel here, which means the flow elevation will
23 start rising vertically against the culvert walls. When that
24 occurs - we have relatively smooth walls here, as compared to the
25 roughness of the bed - and I would expect the velocities to

1 increase, and subsequent -- perhaps become too great for juvenile
2 fish to pass.

3 Q In any event, where you've indicated the streambed to be --
4 and the flow at a higher flow, it's not at a point at the
5 diameter of the culvert, right? Where you would measure the
6 streambed is not at the diameter of the culvert?

7 A I would not measure bankfull width within a culvert.

8 Q Let's turn to Page 26 of your paper. And this is part of the
9 section about no-slope culverts, isn't it?

10 A Yes.

11 Q You're describing here what you believe to be some problems
12 with the no-slope design; is that right?

13 A Yes.

14 Q I would like to focus on the longest paragraph in the middle
15 of the page. Do you see a sentence in the middle of the
16 paragraph that begins, "For example, a five-foot diameter culvert
17 and a five-foot wide stream"?

18 A Yes.

19 Q Based on what we see in the picture on the screen, a
20 five-foot diameter culvert and a five-foot wide stream would not
21 be a no slope-culvert, would it?

22 A If the upstream at the inlet is filled to 40 percent, which
23 roughly may equate to let's say somewhere in this neighborhood,
24 and the bankfull width of the channel is five feet and the
25 culvert then is subsequently designed to be five feet, the bed

1 elevation could closely coincide with the bankfull of the stream
2 as compared to the culvert.

3 Q This example we see on the screen does not depict that,
4 however; is that right?

5 A Without seeing closer the upstream, the inlet, it's hard to
6 determine that for certain.

7 THE COURT: Counsel, let me ask a clarifying question.

8 Dr. Fox, are you saying that if this photograph were reversed
9 and taken from the other side, obviously that streambed would be
10 up close to where the bankfull width is depicted on this side.

11 THE WITNESS: Yes, I believe so. If it's filled to
12 40 percent of the channel, and the culvert is the width of
13 bankfull, bankfull flows then would come from culvert edge to
14 culvert edge.

15 THE COURT: Thank you.

16 By Ms. Woods:

17 Q Staying on that same paragraph on Page 26 of your paper,
18 Dr. Fox, in the last sentence you express some concern about
19 perching with no-slope culvert; is that right?

20 A Yes, it's possible.

21 Q What is perching?

22 A Perching occurs when the culvert outlet becomes elevated
23 above the downstream bed and creates a vertical drop. And this
24 can occur if the velocities -- I should say the flows through the
25 culvert are too great for capacity of that system and they're

1 accelerated and they create the scour downstream.

2 So in this graphic, if the flows are great and they're
3 constricted by the culvert, the energy is increased. It will
4 create more scour downstream in this culvert and create a hole
5 there, essentially.

6 I've observed this occurring in culverts up to 20 to 30 feet
7 deep where you have a certain vertical barrier. This can occur
8 in no-slopes because, if I may draw here, a no-slope culvert is
9 set flat. And if you have any slope to the stream at all, let's
10 say three percent, which is the maximum allowable for the
11 no-slope design option, we still have stream energy routing
12 through this pipe and can create scour at the downstream end,
13 particularly at flows that are greater than bankfull.

14 So if we have a flood that is greater than a bankfull flow,
15 we're likely to see some scour at this outlet. And when that
16 occurs, not only do you have a velocity barrier inside the pipe
17 at that time, but it's possible to create a vertical barrier
18 because of that scour.

19 Q You can't cite any specific examples of where a culvert
20 designed and installed according to the State's no-slope
21 standards became perched, can you?

22 A Of the 28 culverts I looked at, I did not find any perched
23 culverts; however, I would point out that these culverts were
24 fairly recent fixes. They had been around typically less than
25 ten years. And in many instances, those culverts might not have

1 been subjected to those great a flows.

2 Q Stay on Page 26 of your paper. In the second paragraph, go
3 to the eighth line down. You say a no-slope culvert installed in
4 a five-foot stream would leave less than three feet of clearance
5 at the upstream end with the channel bed.

6 Do you see that?

7 A Yes.

8 Q Now let's turn to the WDFW Culvert Design Manual, Exhibit W
9 089-B, to Page 96. And I've got it on the screen, and the print
10 is tiny, unfortunately.

11 THE COURT: You can magnify that.

12 MS. WOODS: I think I may have one that I can put on the
13 document camera.

14 By Ms. Woods:

15 Q In any event, I have highlighted at the last sentence on the
16 page -- do you see there, Dr. Fox, where it says, "Debris
17 movement will have to be taken into account when the height of
18 the culvert is planned. Four feet of clearance between the
19 culvert bed and the crown is considered a minimum, and in
20 debris-prone channels more should be considered"?

21 A That's according to the method. However, I must point out in
22 my observation of the 28 culverts, many culverts did not have
23 even as much as three feet of clearance.

24 Q Let's turn to the hydraulic method of culvert design. It
25 starts on page 27 of your paper. On page 27 of your paper,

1 Dr. Fox, in the final sentence, you say that, "One problem with
2 the hydraulic design is that it targets a single species or life
3 phase of fish and ignores the rest."

4 Is that right?

5 A Yes.

6 Q But a culvert designed to pass a six-inch adult trout will
7 also pass an adult salmon, won't it?

8 A It can, yes.

9 Q And a culvert designed to pass a six-inch adult trout can
10 also pass juvenile salmon most of the time, can't it?

11 A It is designed at a -- it's designed around a design flow,
12 which can occur multiple times within a year, to accommodate the
13 six-inch trout, which is the four feet per second velocity
14 requirement.

15 Those are speeds too great for juveniles to pass at that
16 time. So I guess it depends on the swimming ability of each
17 species we're looking at. But the four feet per second is the
18 general rule, and what species can navigate safely or
19 successfully through those discharges varies.

20 Q Well, if you look at the entire year, on most days, the
21 culvert design to pass the six-inch trout can also pass juvenile
22 salmon; is that right?

23 A If flows remain below that velocity requirement, which I
24 suspect is at least during the low-flow periods of the year,
25 juveniles can pass. But if fish are subject to one occurrence of

1 high flows during a year, they are subject to higher mortality at
2 least once a year.

3 Q Can that happen in a natural stream?

4 A I should say the discharges, yes, can exceed -- you can get
5 those design flows through the natural stream, but the difference
6 in the natural stream environment is you have those margin areas
7 that can afford lower velocity refuge areas; whereas the culvert,
8 if it's constricting the channel, you will not.

9 Q Would juveniles tend to go up to refuge areas at times of
10 high flow?

11 A Yes. They are constantly seeking low-velocity refuge areas
12 to escape those high flows and turbidity that might flush them
13 downstream.

14 Q So they are probably not going to be in parts of the stream
15 that have a high flow. Would that be right?

16 A They would be seeking those low-velocity refuges. If one
17 area is a low-velocity discharge and the flows increase to those
18 levels that the current areas they were residing in become
19 inhospitable, they may seek areas laterally, if they can find
20 them. But if the stream is confined somehow, such as the road or
21 by riprap in the banks, they will seek upstream areas,
22 particularly tributaries, to find those low- velocity refuges.

23 Q Let's turn to Page 28 of your paper. I am looking at the
24 first bullet on your Figure 17. You say here that the hydraulic
25 design method assumes no bed material.

1 Do you see that?

2 A Yes.

3 Q Now, going back to the WDFW Culvert Design Manual -- let's go
4 to Page 21. Dr. Fox, do you see Figure 5-1 at the top of that
5 page?

6 A Yes.

7 Q The heading for Figure 5-1 says "Hydraulic Option," does it
8 not?

9 A Yes.

10 Q Figure 5-1 shows streambed material inside the culvert, does
11 it not?

12 A Yes, it does, in this picture.

13 Q Now, turning back to your paper, let's look at Page 41 and
14 Figure 20.

15 Do you have it?

16 A Yes.

17 Q This is a photograph, is it not?

18 A Can you put that on the screen?

19 Q I have a black and white one I can put on there.

20 Dr. Fox, you took this photograph, did you not?

21 A Yes, I did.

22 Q This photo shows a culvert with streambed material inside it,
23 doesn't it?

24 A Yes.

25 Q And this is a culvert on Alderbrook Creek, State Route 106,

1 right?

2 A Yes.

3 Q Do you recall what the state's records show about what design
4 method was used for this culvert?

5 A I measured the performance of the culvert based on the field
6 measurements. It wasn't stamped with a design method when I got
7 out there, so I merely determined -- I guess, assumed which
8 method it was, based on the physical measurements of the culvert.

9 This particular culvert was at bankfull width or near
10 bankfull width. So I either -- from that determination, I assume
11 that it was probably done with a no-slope design, although in
12 this graphic caption here, I point out that it meets the Barnard
13 qualification for stream simulation, meaning it met the ratio
14 requirement from .8 to 1.6, which doesn't really tell you whether
15 it's wider or narrower in the stream. It just falls within that.
16 That's, hence, why it's classified as meeting those
17 qualifications. But in the field, it was measured at near
18 bankfull width. So it could be no-slope or it could be hydraulic
19 or a poorly designed stream simulation culvert.

20 Q Do you recall what the state's records show was the design
21 method that was used?

22 A I don't have a copy of that in front of me. I believe during
23 our deposition you mentioned what the intended design criteria
24 was with a number of culverts, but I guess you could call it, I
25 guess, whatever you want.

1 What I observed in the field was based on the physical
2 measurement of how it performs relative to the design criterias
3 defined in the state manual.

4 Q Could this culvert shown on the screen be a hydraulically
5 designed culvert?

6 A It could be.

7 Q Let's go to Page 30 of your paper.

8 A As long as we have this graphic up here, I wanted to point
9 out that the clearance here -- this is approximately three feet,
10 which suggests that the four-foot free board above bankfull flow,
11 which is much less than this, is not met in this culvert design.
12 Perhaps it wasn't implemented as intended.

13 MS. WOODS: Your Honor, the witness is testifying
14 without having been asked a question.

15 MR. STAY: Your Honor, I think the witness was just
16 completing his answer to make it full.

17 THE COURT: I think so. It will stand.

18 By Ms. Woods:

19 Q All right. Back to Page 30 of your paper, Dr. Fox. Looking
20 at the last paragraph in the first line, you say, "Use of the
21 hydraulic method does not require actual field measurements."

22 Do you see that?

23 A Yes.

24 Q Now let's look at the state regulation involving culvert
25 design, which probably is in that same notebook you have. It's

1 Exhibit W 089-F.

2 A Okay.

3 Q W 089-F is WAC 221-10-070; is that right?

4 A Yes.

5 Q Let's take a look at Subsection (3)(b)(ii). Would that be a
6 description of the hydraulic design method?

7 A It appears to be making reference to other sections that I'm
8 not certain whether that is truly a hydraulic method or not.

9 Q You'll see on -- the page that's on the screen as Table 1,
10 are you familiar with that table?

11 A Yes.

12 Q Is that part of the hydraulic method?

13 A Yes, it appears to be so.

14 Q So would it be your guess that this WAC that is displayed
15 here, 221-10-070, subsection (3)(b)(ii) sets forth the hydraulic
16 method?

17 MR. STAY: Your Honor, I object. It calls for the
18 witness to speculate. He's already said it referred to other
19 sections, and he didn't have a way of putting that all together.
20 If Ms. Woods wants to put those up in sections on the board, he
21 can probably make an analysis.

22 THE COURT: The objection's overruled.

23 Do you understand the question?

24 THE WITNESS: Yes, I do. Table 1 appears to be slightly
25 different than what is actually in the culvert manual.

1 Therefore, I guess to fully understand it, though, if there are
2 any nuances to these differences, if it is in fact the same.

3 But I do see that the four feet per second for adult trout is
4 cited here in the culvert lengths of 10 to 60 feet, which is
5 consistent with the hydraulic method.

6 By Ms. Woods:

7 Q Let's focus on Section 3(b)(ii)(d). Do you see where it
8 says, "The downstream bed elevation used for hydraulic
9 calculations and culvert placement in relation to bed elevation
10 shall be taken at a point downstream at least four times the
11 average width of the stream"?

12 Do you see that?

13 A I see the text here, yes.

14 Q Did you do that without taking actual field measurements?

15 A The hydraulic method relies upon the fact that you cannot
16 predict the size of the gravel in the culvert or the
17 sustainability of that material in the culvert bed. What you can
18 guarantee is that the corrugations or the roughness of the
19 culvert itself are going to remain the same. Hence, the
20 hydraulic method typically uses the culvert rough -- if it can be
21 guaranteed that the bed materials or other features that performs
22 those roughness areas to slow velocities down can be maintained
23 through an array of flood flows or change in conditions, then
24 perhaps they would use those in their calculations for this
25 design standard.

1 Q Does it not appear, however, from the WAC, that you would
2 have to visit the culvert and take field measurements in order to
3 design a hydraulic culvert?

4 A This calls for hydraulic calculations. It, as I understand
5 the hydraulic method, does not pertain to the pipe itself. It's
6 using the hydraulic method. The hydraulic method is based on
7 roughness, aperture of the pipe, and the amount of discharge to
8 go through it at a design flow.

9 They design that aperture or the size of the culvert around
10 four feet per second, which is the whole premise of the hydraulic
11 method of design. This appears to me as a hydraulic calculation
12 that you would perform for a stream channel not specifically
13 related to the hydraulic design method.

14 Q But it's part of the WAC that we discussed as probably
15 describing the hydraulic method; isn't that right?

16 A I reference the four feet per second of adult trout, which is
17 consistent with the hydraulic method. But as I interpret the
18 design criteria, it is applied to the pipe itself rather than the
19 streambed.

20 Q Let's go to Page 3 of your paper. Page 3, second paragraph,
21 and I'm not showing it on the screen. Page 3, second paragraph,
22 third line. You say, "The hydraulic design method size is a
23 culvert equal to or less than the channel's natural width.

24 Do you see that?

25 A Yes, I do.

1 Q That's not always true, is it?

2 A For the hydraulic method, it is not always true. As I
3 stated, the hydraulic method is designed around a velocity
4 requirement, and they build the culvert size around that. So if
5 you have a very slow-moving stream, such as a very flat gradient,
6 it's possible that you could design a culvert that's smaller,
7 according to this method, than the bankfull of that channel and
8 still meet those velocity criteria.

9 Q But it's also possible that a culvert designed under the
10 hydraulic method can be wider than the natural channel, isn't it?

11 A It can be, yes.

12 Q During your direct testimony, you talked about your field
13 testing study, which begins on Page 32 of your paper. And I
14 believe you said you selected 28 sites for your study; is that
15 right?

16 A Yes.

17 Q And I believe that you said that you selected 27 of those
18 sites from the 2005 progress report for the Washington State
19 Department of Transportation Fish Passage Project?

20 A That's true, yes.

21 Q Your study sample was limited to state highway culverts,
22 wasn't it?

23 A Yes.

24 Q You did not use any Department of Natural Resources sites for
25 your study, did you?

1 A No, I did not.

2 Q Without evaluating Department of Natural Resources culverts,
3 it is hard to say whether your sample was truly representative of
4 the State's culvert designs, isn't it?

5 A The culverts were deemed corrected in accordance with the
6 current state-of-the-art correction methodology, which is the
7 culvert manual from Bates, et al., 2003, and the preceding
8 version, 1999. The standards I assume would apply -- that apply
9 to state highways would also apply to the Department of Natural
10 Resources.

11 Q But you didn't actually evaluate any DNR culverts, did you?

12 A I did not have a list of culverts from the DNR that pointed
13 to which culverts had been corrected; otherwise I may have
14 included the sample at that time.

15 Q I believe you described some of the fieldwork that you did,
16 and I believe you said you had a total station device and took
17 some velocity measurements in the streams and the culverts; is
18 that right?

19 A That's correct.

20 Q When you measured water velocity, you took measurements at
21 only one cross-section in the culvert; is that right?

22 A Well, the culverts I could get inside of. For one, if the
23 culvert was -- we could get our equipment and personnel into a
24 four-foot diameter culvert, which includes up to half the bed
25 being filled at times. So we were limited to which culverts we

1 could get cross-sections. There were only maybe a small sample,
2 two or three, that we could not actually get inside.

3 And the cross-section within the culvert that we did sample
4 was at the midpoint, which we assumed were representative of the
5 hydraulic forces passing through that aperture.

6 Q But you took only one cross-section in those culverts that
7 you were able to get into; is that right?

8 A Yes.

9 Q And you also took one cross-section in the nearby stream; is
10 that right?

11 A Yes. We found a representative site upstream that had no
12 apparent influence from the culvert itself, to where we made the
13 assumption that it was representative of the natural stream to
14 make our comparisons to what was taking place within the culvert.

15 Q Water velocity in streams can be variable at different sites,
16 can't it?

17 A That's true.

18 Q You did nearly all of your fieldwork in 2006, right?

19 A Yes.

20 Q You have not done any fieldwork for your study since 2007,
21 have you?

22 A No, not according to this paper, I have not.

23 Q Have you taken steps to prepare your study for publication?

24 A Not at this time, I have not taken steps.

25 Q Have you given any conference presentations on your study?

1 A No, I have not.

2 Q I believe you described during your testimony that one of the
3 things you did was to try to determine what design method had
4 been used at the sites you selected, right?

5 A Correct.

6 Q Let's look at Table 1 on Page 37 of your paper. I recognize
7 that there is also a version of Table 1 on AT-001-2. For my
8 purposes, it doesn't matter which one we use.

9 A Is there a digital version we can display on the monitor?

10 Q We will see if we can do the technology for this. There is a
11 column on this Table 1 that shows design method, right?

12 A Yes.

13 Q That column indicates what design method you believe had been
14 used for the sites you visited, right?

15 A Yes.

16 Q No slope -- or "NS" means "no slope"; is that right?

17 A Yes. No slope. "SS" means "stream simulation," and "F"
18 means that a fishway was installed upon field inspection.

19 Q You don't know of any published protocol for determining in
20 the field what method was used to design a culvert, do you?

21 A Basically I took the protocol from the culvert manual that
22 described the sizing of the culvert based on the width and the
23 slope and compared that to field measurements, and I made an
24 estimate of what it was -- the footnote here, 1, refers to a
25 presumed base on the field measurements relative to the design

1 criteria. So as I mentioned, there's no stamp of what the
2 intended design was on that culvert. So I made the best guess
3 based on comparison to field measurements relative to design
4 criteria.

5 Q It's possible that if you had one person designing a culvert
6 using the no-slope method and another person designing a culvert
7 using the stream simulation method, you could wind up with two
8 culverts that look the same; isn't it?

9 A There are some situations where that could occur. For
10 example, a highly confined stream where the bankfull width is
11 similar to a flood elevation higher than that, because the width
12 doesn't change, the water rises vertically between two confined
13 features. So that is possible if it's truly designed to those
14 standards.

15 Q A few months ago in one of your depositions, we went through
16 this list that is shown on the screen and compared what you
17 thought the design method was with what the state's records show.

18 Do you recall that?

19 A Yes.

20 Q The state's records differed from your best guesses as you
21 have characterized them about one-third of the time; isn't that
22 right?

23 A Yes, as you pointed out.

24 Q You will be happy to know I am not intending to go through
25 the whole list today, but I do want to focus on one site. On

1 this table, Table 1, Page 37 of your paper, the 12th site on the
2 list is a project at State Route 203 and an unnamed tributary to
3 Harris Creek; is that right?

4 A Yes. It is there.

5 Q You judged this project to be a successful one, didn't you?

6 A Yes. The culvert width, which turned out to be more
7 resembling of a bridge than a culvert, it's hard to define the
8 difference, but based on the width of the piers or the size of
9 the structure, considering that, the aperture, it was wider than
10 the bankfull channel. And as such, it performed quite well.

11 In fact, if you would like to look at the graphic
12 representation I have that displays the velocities and compares
13 them to the stream channel to the culvert, we can look at that as
14 well. That illustrates that the velocities were actually slower
15 through the culvert aperture than the natural stream, which is
16 likely to successfully pass fish at a large array of flows.

17 Q You also found no woody debris passage problems with this
18 site, right?

19 A There were no -- there is no evidence of woody debris piled
20 up at the inlet at the time of the surveys. In fact, there were
21 some woody debris within the culvert itself.

22 Q According to Table 1 of your paper, and as you have described
23 it, you concluded that this site on the Harris Creek tributary
24 was a stream simulation or bridge -- stream simulation, culvert
25 or bridge, right?

1 A It had abutment similar to a bridge, but the label of stream
2 simulation was assessed because it was wider. The aperture of
3 the culvert was wider than bankfull width, which suggested to me
4 that it more closely met the stream simulation definition than
5 any of the other design criteria.

6 Q Do you recall what the state's records said was the design
7 method for the culvert at this site?

8 A I don't recall.

9 Q Would it help if we looked at the State's records? Would you
10 be able --

11 A Still, I must point out, you can label it whatever you want,
12 but what I observed in the field based on the physical
13 measurements and how that relates to a design standard was how I
14 made my estimate on the design methods. So it seems irrelevant
15 to what your intended design was. In fact, some cases where I
16 assessed a no-slope criteria, and you pointed out it was actually
17 intended to be a stream simulation, suggests the implementation
18 of that design standard was in error. So I looked at performance
19 and how it relates to fish passage and relates to design
20 criteria.

21 Q The site on the unnamed tributary to Harris Creek, is it
22 possible that it was a no-slope culvert?

23 MR. STAY: Excuse me, your Honor.

24 Counsel, was it a state-identified no-slope or was it a
25 no-slope in the field? You seem to be talking past each other.

1 THE COURT: Actually, I think he answered the question.
2 He says it doesn't matter what you call it, he just measured
3 performance.

4 MR. STAY: Thank you, your Honor.

5 THE COURT: Counsel, let's go ahead and take our midday
6 break at this point in time. We'll try to have you back here at
7 20 minutes after. We will start as soon as we get everybody
8 here.

9 (At this time, a lunch break was taken.)

10 THE COURT: Counsel, we're ready to begin our afternoon
11 session.

12 Ms. Woods, I believe you were in your cross-examination with
13 Dr. Fox.

14 MS. WOODS: Thank you, your Honor.

15 By Ms. Woods:

16 Q Dr. Fox, good afternoon.

17 A Good afternoon.

18 Q This morning you testified about a study you did of stream
19 simulation culverts; is that right?

20 A An attempt to do a stream simulation. It ended up being more
21 culverts that approached stream simulation, or wider culverts
22 versus smaller culverts.

23 Q You had a sample of eight culverts for that study?

24 A I believe so. If I am allowed to look at my declaration, I
25 could tell you exactly that number.

1 Q Of course. I believe it is on Page 38.

2 A Yes. That met the state study plan, specifically Bob
3 Bernard's protocol for stream simulation or near-stream
4 simulation based on the culvert width to stream width ratio.

5 Q Only one of the culverts that you looked at actually
6 qualified as a stream simulation culvert; is that right?

7 A That's correct.

8 Q Weren't most of the culverts you looked at no-slope culverts?

9 A Based on the physical criteria of my width, compared to the
10 design criteria, I assumed that most of them -- most of them met
11 the no-slope criteria more appropriately than the stream
12 simulation.

13 Q In your testimony this morning, Mr. Stay asked you about
14 Figure 6 in your paper, which is on Page 13. In the photo credit
15 for Figure 6, you show that it is taken by Bob Gubernet, USFS; is
16 that right?

17 A Yes.

18 Q What does "USFS" stand for?

19 A United States Forest Service.

20 Q The culvert that's depicted in Figure 6, it's not a state
21 culvert, is it?

22 A No. I used this as an example of problems that culverts can
23 have with impeding wood transport. Actually, I'm not sure whose
24 ownership that culvert was. I presume since it was a Forest
25 Service photo it was a Forest Service culvert, but that's not

1 **verified.**

2 **Q Now, before you conducted this study of state highway**
3 **culverts, you've examined some tribal culverts, haven't you?**

4 **A Yes, I have.**

5 **Q In 2002, did you examine six culverts owned by the**
6 **Muckleshoot Tribe?**

7 **A Yes.**

8 **Q Did any of them meet the physical criteria to pass fish?**

9 **A None of them did, but there was no fish access to any of**
10 **these culverts.**

11 **Q And why was that?**

12 **A Physical barriers were attributed to at least one culvert.**
13 **The other five were associated with insufficient habitat. In**
14 **other words, the channel did not meet the physical qualifications**
15 **to be designated as fish habitat by the state standards.**

16 **Q So the Muckleshoot Tribe decided it was not a priority to**
17 **make its six culverts fish passable; is that right?**

18 **A It was not a priority because fish cannot access these**
19 **culverts, so there's no need to make the design standard for**
20 **these culverts meet that criteria.**

21 **Q Are there some culverts owned by the state that might fall**
22 **into that category?**

23 **A Yes.**

24 **Q You have been involved with some collaborative projects with**
25 **the state, have you not?**

1 A Could you please be specific?

2 Q You were involved in writing part of the State Forest
3 Practices Board Methodology for conducting watershed analysis; is
4 that right?

5 A Yes. I participated in that fisheries module.

6 Q Was that activity ordered by a federal court?

7 A I believe it was a state process.

8 Q You don't have a professional engineering license, do you?

9 A No, I do not.

10 Q Have you ever designed a no-slope culvert?

11 A I have merely provided recommendations based on biological
12 factors to pass fish. The design of culverts extends beyond that
13 in terms of structural integrity and facets of the actual
14 construction that deviate from the biology. So my breadth of
15 participation in culvert design has been limited to
16 recommendations for fish passage.

17 Q So you've never actually designed a no-slope culvert?

18 A No. As I said, the design entails much more than just the
19 specifications for fish passage.

20 Q And you've never designed a hydraulic culvert?

21 A No. The same applies.

22 Q Finally, you have never designed a stream simulation culvert,
23 right?

24 A Not the full design, no.

25 MS. WOODS: Thank you.

REDIRECT EXAMINATION

By Mr. Stay:

Q Dr. Fox, you mentioned a fishway this morning when you were testifying. What is a fishway?

A A fishway is a band-aid, if you will, to enable fish passage around a culvert that has failed to provide fish passage. It is typically -- there are problems associated with the culvert that can't pass fish due to a perched outlet or some other facet that precluded access to the culvert.

A ladder, for example, is a fishway to enable fish to get to that outlet. In my observations of the 28 culverts I looked at, the surrogates for fish passage were a series of weir logs that provided small incremental steps for the fish to get to a culvert, where the culvert itself was not fixed, but the state did consider those remedies as fixed.

But what it did is it enabled fish to get to a poorly designed culvert. So they may get to the inlet, as they weren't able to before, but they are still faced with the same velocity problems associated with causing the barrier and subsequent scour downstream. I could give you some examples of that, if you'd like.

There are other forms of fishways. Baffles inside of culverts are considered a retrofit, where it provides some artificial roughness in the culvert, slows water velocity down. That works at some flows, but at higher flows it creates

1 turbulence, which creates an impediment for fish passing, and
2 also it can trap wood and further constrict that aperture above
3 the culvert to pass flows, subsequently increasing the
4 velocities, and that creates a fish blockage.

5 The state considered these retrofits or fishways a temporary
6 option in their culvert design manual. They don't consider it a
7 permanent solution.

8 Q I put onto the screen for you, Dr. Fox, Page 30 of your
9 declaration, Figure 18. I hope I am right on this. Is that a
10 culvert with baffles in it? Is that like a fishway, or did I
11 miss this altogether?

12 A Yes. These are baffles within -- I believe it's Steamboat
13 Creek, near the peninsula, designed to create that roughened
14 bottom to enable a series of incremental steps for fish to
15 navigate through the culvert. Without them, the flows would be
16 fast-moving sheet flow over the concrete bottom. These may
17 work -- or at least they will help facilitate that, but they're
18 not regarded as a full solution for fish passage, nor are they
19 regarded as a permanent solution.

20 MR. STAY: Thank you. Nothing further, your Honor.

21 THE COURT: Dr. Fox, I just have a couple of questions
22 for clarification.

23 In your testimony, you talked about the three different
24 culvert designs. The hydraulic design or method, you indicated
25 that from your perspective as a biologist, if it allows the flow

1 of four feet per second, then that qualifies as a hydraulic
2 design?

3 THE WITNESS: Hydraulic design is built around that four
4 feet per second velocity criteria. So the design method controls
5 the slope of the culvert and the aperture of the culvert to not
6 exceed that as a design flow.

7 The design flow is determined based on some regressions.
8 There's other ways to determine that: exceedance flows based off
9 of gauge records. What it amounts to being is a flow that is at
10 least occurring on a probability of at least once a year, in many
11 cases, less. And when that occurs, then you get the four feet
12 per second velocity.

13 THE COURT: My understanding from your testimony was
14 that that four feet per second is navigable by a juvenile trout?

15 THE WITNESS: An adult trout. Six-inch trout is how
16 it's defined; whereas a juvenile salmonid ranges from one to
17 perhaps three inches, tops.

18 THE COURT: Can you tell me, from your review of the
19 literature, if you know, why that particular species was picked?

20 THE WITNESS: The Chinook and Coho for the juvenile
21 representation?

22 THE COURT: Yes.

23 THE WITNESS: Well, Coho because they are a species that
24 resides year round in freshwater streams, particularly during the
25 flood stages when they're vulnerable to passage, they're seeking

1 those refuge habitats.

2 But Steelhead also are susceptible to the passage of culverts
3 during those floods. The design of culverts should accommodate
4 the weakest species. And Chinook and Coho juveniles,
5 particularly after they've emerged from the gravel, they're small
6 and vulnerable to high velocities. So those are commonly used
7 in, I guess, fish passage designs as being the weakest species,
8 weakest life history stage of a species.

9 THE COURT: You also testified about the importance of
10 wood in many different ways for the habitat, about how wood could
11 easily become trapped, lodged up against the upstream flow of
12 many of these culverts. Would any culvert design prevent that
13 from occurring, or are you always going to need ongoing
14 maintenance to clear -- like the one slide you had had a big tree
15 that had fallen over the top.

16 THE WITNESS: Yes. In those instances, you can't
17 prevent all passage of wood. The stream simulation culverts
18 probably provide the best opportunity for passage. It may not
19 preclude all impeding of wood unless you have a bridge. The
20 passage is best facilitated if you have the greatest width and
21 vertical clearance for wood to pass.

22 In fact, anecdotally, in speaking with maintenance crews
23 along the highway that work for the State, they liked having
24 stream simulation culverts because they said, We never have to
25 worry about cleaning wood out of those culverts, it's rarely

1 there. But "rarely" means it still can occur in some instances.

2 THE COURT: Thank you.

3 Mr. Stay, any questions based on the Court's questions?

4 MR. STAY: No, your Honor.

5 THE COURT: Ms. Woods.

6 MS. WOODS: No, your Honor.

7 THE COURT: Dr. Fox, thank you. You may step down.

8 Plaintiffs may call their next witness.

9 MR. MORISSET: May it please the Court, Mason Morisset,
10 attorney for the Tulalip Tribes. Our next witness will be
11 Mr. Kit Rawson.

12 Before we begin, your Honor, we might want to engage in a
13 short discussion. I've talked briefly with Mr. Tomisser about
14 what we need to do and to seek your advice on how to proceed. We
15 have a number of things to take care of, an offer of proof of the
16 original testimony, some of which was excluded pursuant to your
17 Honor's order on the Daubert motions.

18 We have a revised declaration which will serve as the basis
19 for Mr. Rawson's direct exam, two parts of which have been
20 revised pursuant to the Court's ruling and about which the state
21 attorney general may have something to say. We have a number of
22 exhibits which the state has not agreed to admit, although I'm
23 not quite sure why, but we need to discuss those. I have a
24 number of thoughts on this -- the problem of the revisions of
25 testimony and redaction of testimony based on your Honor's order

1 of last week, which I had prepared to make at the appropriate
2 time. I finally just wrote those down and put them in a bench
3 memo, which I've handed up and which opposing counsel also has.

4 So unless Mr. Tomisser wants to weigh in at this point, I
5 would like to submit an offer of proof of Mr. Rawson's original
6 testimony into the record to sustain it for appeal. And I have
7 marked another copy of that original testimony, which was the
8 subject of your order, with a new number, not knowing exactly how
9 the Court wanted to handle that item.

10 THE COURT: Mr. Morisset, let me ask, the next witness
11 is Kit Rawson, correct?

12 MR. MORISSET: Correct, your Honor.

13 THE COURT: Are Phil Meyer and Tyson Waldo also expected
14 to testify?

15 MR. MORISSET: Yes. I'm going to propose them. I'm not
16 sure what the attorney general will say. But that's why I wanted
17 to lay this all out, because we may end up discussing these same
18 points with three witnesses, starting with Mr. Rawson.

19 THE COURT: All right. I understand.

20 The original declaration of Mr. Rawson was AT-007; is that
21 correct?

22 MR. MORISSET: That's correct.

23 THE COURT: And so you've now redacted that to comply
24 with the Court's ruling on the motion in limine?

25 MR. MORISSET: Correct.

1 THE COURT: And that has been given a different number?

2 MR. MORISSET: No. What I did for now, and we can
3 change this, is I renumbered the original one AT-007-A, and the
4 new one, the redacted one, 007-B. But we can of course mark them
5 however it works for the Court.

6 THE COURT: No. That's fine. So A will be the original
7 one. Do you want to make an offer of proof to preserve your
8 objection to the Court's ruling?

9 MR. MORISSET: Yes.

10 THE COURT: All right.

11 MR. MORISSET: We'd offer into evidence Exhibit AT-007-A
12 as an offer of proof of the direct testimony of Mr. Rawson as it
13 existed before the Court's ruling, called the Daubert Motion
14 Ruling, and ask that it be included in the record for that
15 purpose.

16 THE COURT: And I have no objection to that.

17 MR. TOMISSER: No objection, your Honor.

18 THE COURT: And so now AT-007-B is the redacted version
19 that complies with the Court's motion in limine ruling.

20 MR. MORISSET: That's correct.

21 THE COURT: All right.

22 Mr. Tomisser?

23 MR. TOMISSER: We do object to that, your Honor. It
24 does not comply with the Court's ruling. We believe the Court
25 should address this dispute amongst the parties about Kit Rawson

1 in the testimony based on what we received. The redactions in
2 fact do not comply with the Court's order. And we have an
3 objection to what we received now as new testimony from
4 Mr. Morisset just this morning on the eve of Mr. Rawson. I can
5 explain that to the Court. I would like an opportunity to do
6 that.

7 We just received the bench memo this morning as well and have
8 barely had time to review that, along with the new testimony of
9 Mr. Rawson. At its essence, your Honor, the state in its Daubert
10 Motion filed the motion as a very specific request as to what
11 portions of the plaintiffs' testimony was to be excluded,
12 including what was identified as Part 5 of the written direct
13 testimony of Kit Rawson.

14 The tribes then responded with their briefing on that point,
15 and the Court then issued its order after considering that
16 briefing and granted that motion, including the exclusion of Part
17 5 of Kit Rawson's testimony, which was part of the sequence from
18 Mr. Waldo.

19 The operative portion of the court's order on that was
20 pointing out the fact that because the plaintiffs didn't have any
21 evidence of the actual number of salmon that were reaching a
22 barrier culvert, that the testimony was too speculative to be
23 allowed.

24 And so what we received this morning from the tribes was,
25 well, okay, instead of using the specific numbers that we have

1 from Mr. Waldo, we will just present a range instead and go with
2 that. It all gets to the same point -- attempts to get to the
3 same point, which we would object to. It's still barred by what
4 the Court had done. And we also object, frankly, that this
5 should have been part of the direct case some time ago.

6 This is now simply trying to reassemble some part of the case
7 on the day the witness gets presented. I've had no opportunity
8 to study this material. He has citations that we haven't been
9 able to see. It's simply not an appropriate thing to put us in a
10 position to do that at this point in the trial. And
11 fundamentally what is being done here is, not only is the
12 redacted testimony that they've presented not consistent with the
13 Court's order, it's actually new material as well that's being
14 presented in the proposed redacted version. They've
15 substituted -- they have taken out the Waldo material, put in new
16 charts and tables based on these ranges, as they refer to it in
17 the redacted version.

18 So it is not simply a matter of them going through and
19 striking Part 5 of Mr. Kit Rawson's testimony, as ordered by the
20 Court. It's been redone with new testimony placed into it. What
21 we would request the Court do at this time is to simply order
22 that the court's initial order striking Part 5 of Kit Rawson's
23 testimony be maintained and that the redacted version proposed by
24 Mr. Morisset simply do that, that Part 5 is out.

25 THE COURT: Mr. Morisset, maybe you can explain to me

1 why you disagree with the state's assessment that this proposed
2 redacted testimony does not comply with the Court's order.

3 MR. MORISSET: One reason, your Honor, I tried to bring
4 up the whole picture here is so we could do exactly what we're
5 doing here to try to sort it out.

6 I think that if we were able to voir dire Mr. Rawson briefly
7 on what he did in Paragraph 5, it would be clear that he utilized
8 the material that was already there as an independent basis for
9 determining a range of production potential, as opposed to using
10 what we call the Waldo numbers as a point of production, which
11 was objected to and ruled on by your Honor.

12 So it's true that we did not just throw it out the window,
13 but I did ask Mr. Rawson; Can't you independently show what the
14 range of production would be from the material you already had in
15 the report? And it's my understanding that he did that, but we
16 probably need to voir dire him on that if you want to actually
17 make a ruling on eliminating Paragraph 5 of his new revised
18 testimony.

19 And then of course I want to examine him on the rest of the
20 testimony that was not excluded.

21 THE COURT: All right. I agree with the state. I think
22 Part 5 is out.

23 Regarding the rest of the proposed testimony, other than the
24 fact that it may be new, which is the objection I'm hearing from
25 the state, what you're telling me is that basically he took

1 already existing data and just reworked it in a different way.

2 MR. MORISSET: That's not -- that's why I say, we may
3 need to ask him. I don't think he took existing data and
4 reworked it. I think he looked at the material from the
5 footnotes primarily, which had proposed ranges, and went ahead
6 and used those instead of the Waldo information. I'm kind of
7 glossing over what he did, your Honor.

8 THE COURT: Here's what I propose, then. What makes it
9 easy, especially without a jury in a case like this, is let's go
10 ahead and do the testimony. I understand the objections that are
11 being brought by the state. I'm quite aware of what the ruling
12 was previously that we made in this particular area.

13 And so Mr. Tomisser, if it comes to that, the Court obviously
14 can disregard a lot of this if it turns out that -- it either
15 does not follow the ruling or it's so far afield that it's not
16 going to be considered. Does that make sense?

17 MR. TOMISSER: I think so, your Honor.

18 THE COURT: All right. And the only thing I'm concerned
19 about is will you have sufficient time -- you can tell me this
20 after the direct. Do you have sufficient time to be able to
21 cross-examine in this particular area? Or maybe you want to save
22 that for later, have more of an ability to take a look at exactly
23 what was testified to.

24 Does that make sense?

25 MR. TOMISSER: Yes.

1 THE COURT: All right, Mr. Morisset. Are we ready,
2 then, with Mr. Rawson?

3 MR. MORISSET: Well, then I wondered again -- I'm sorry,
4 Your Honor. I'm trying to be orderly. I wondered if we needed
5 to talk about the exhibits which, in the opening dramatic reading
6 by Mr. Sledd of exhibit numbers, I didn't catch as being agreed
7 to, and that is AT-00-2 and -3. And I want to be sure that I
8 understood that correctly and perhaps address that, because there
9 may be some misunderstanding of what these exhibits are.

10 These were listed exhibits, is my understanding, by
11 Mr. Rawson because they were material not readily available.
12 Under the rules of engagement here, we all agreed to give each
13 other material that wasn't readily available.

14 THE COURT: I do not show that AT-002 and AT-003 were
15 admitted.

16 MR. MORISSET: I'm sorry. 007-2, and 007-3. They were
17 attached to 007. This may show up as attachments. As I say, it
18 was material that just wasn't readily available as part of an
19 expert report.

20 THE COURT: All right. AT-007-2, according to my
21 records, has been admitted.

22 Madam Clerk, is that correct?

23 THE CLERK: No.

24 THE COURT: All right, Mr. Morisset. I'm sorry. We had
25 admitted 072, not 007-2, so you're right, then that's not been

1 admitted as of this point in time, and neither has 007-3. Those
2 are both declarations that concern themselves with the testimony
3 of Rawson. That's where we are at this point.

4 MR. MORISSET: Yes. I'm just not clear if there is an
5 objection or if we just have a miscommunication about what they
6 are.

7 THE COURT: Mr. Tomisser?

8 MR. TOMISSER: We still have an objection, your Honor,
9 because they were provided by Mr. Rawson because he thought he
10 would be unavailable to us, as something that he was relying on
11 as an expert in this case. It doesn't make the document
12 admissible. We really didn't want it. We have no use for it
13 ourselves. It shouldn't come in simply as an exhibit.

14 If it was something that he relied upon in making his
15 testimony, a reference could be made, but the entire underlying
16 exhibit wouldn't come in as evidence separately in the case.

17 MR. MORISSET: And once again, Mr. Rawson is here, and
18 we can ask him what his use was. It was my understanding they
19 were supplied primarily as a courtesy.

20 THE COURT: I understand. Mr. Morisset, let's do this.
21 Let's get our witness on the stand, you can lay the foundation
22 for those, and then the Court can make a ruling at that point.

23 MR. MORISSET: Thank you. I will call Kit Rawson,
24 please.

25 THE COURT: Mr. Rawson, good afternoon. If we could

1 have you step in front of our clerk, raise your right hand and be
2 sworn.

3 Whereupon,

4 KIT RAWSON

5 Called as a witness, having been first duly sworn, was examined
6 and testified as follows:

7 THE CLERK: Please state your full name and spell your
8 last name for the record.

9 THE WITNESS: Kit Rawson, R-A-W-S-O-N.

10 THE COURT: Mr. Rawson, there's water to your left, if
11 you should need it.

12 THE WITNESS: Thank you.

13 THE COURT: You may inquire, Counsel.

14 DIRECT EXAMINATION

15 By Mr. Morisset:

16 Q Would you state for the Court your current address, please,
17 Mr. Rawson?

18 A I am employed by the Tulalip Tribes, 6406 Marine Drive,
19 Tulalip, Washington.

20 Q And what is your position there?

21 A Senior fishery management biologist.

22 Q And just briefly, what does that position entail?

23 A It involves really all aspects of salmon management. I used
24 to do what we call day-to-day harvest management: Planning of
25 fishing regulations and forecasting run sizes and the details of

1 what you do to prosecute a fishery and still protect the
2 resource.

3 But now I'm more involved in long-term harvest management
4 planning, hatchery planning and recovery planning, recovery of
5 habitat and protection of habitat.

6 Q And what is your higher education background?

7 A I have a Bachelor of Science degree in biology and a Master's
8 of Science degree in biomathematics.

9 Q And prior to your employment at Tulalip, what is your
10 employment history that is relevant to fishery matters?

11 A I was a biometrician with the State of Alaska for five years,
12 and I also worked in shellfish and fisheries management as a
13 research assistant when I was a graduate student at the
14 University of Washington.

15 Q And did you previously supply a resume or curriculum vitae to
16 us for use in this case?

17 A I think I have supplied several. I did supply one a couple
18 of months ago.

19 Q I should ask you how many times you have been deposed.

20 A Let's not.

21 Q You probably beat out Dr. Fox.

22 Now, do you have before you what is entitled "Revised
23 Declaration, October 13, 2009, of Kit Rawson?

24 A Yes, I do.

25 Q Have you signed that document or a cover declaration

1 concerning it?

2 A I have signed that document.

3 Q And if you were to present live oral testimony today, would
4 this document contain that testimony?

5 A The 30-page report accompanying the two-page revised
6 declaration would constitute my testimony today, yes.

7 MR. MORISSET: Your Honor, at this time I would normally
8 move to have this report accepted as the direct testimony of the
9 witness. And I guess I can do that, with the understanding you
10 previously indicated you're reserving ruling on Section 5
11 thereof. So with that understanding, I'd move its admission.

12 THE COURT: I just want to be clear. This is the
13 redacted version?

14 MR. MORISSET: Correct.

15 THE COURT: That will be granted.

16 By Mr. Morisset:

17 Q Now, Mr. Rawson, if you could, and I know a lawyer could
18 never do this, but can you summarize in one or two sentences the
19 first section of your direct testimony as written?

20 A Sure. The first section covers the current status of
21 salmon -- Pacific salmon in the Puget Sound region, which
22 constitutes the major portion of the case area. And it talks
23 about how a large portion of the evolutionarily significant units
24 and stocks in the Puget Sound region of all species of salmon
25 have declined to such a level that they're endangered,

1 threatened, or of concern.

2 It talks about how all of the stocks of salmon in Puget Sound
3 have declined to much lower levels than historic levels. And it
4 talks about some of the work that we, the tribes and the state,
5 did to determine that.

6 Q And if you would look at Section 2 of your direct testimony
7 entitled "Causes of Decline in Status," would you give us a
8 similar quick summary of that?

9 A Yes. This section talks about the H's: Harvest management,
10 hatchery management, habitat. It also talks about ocean
11 survival. It talks about how, generally speaking, harvest
12 management has been responsive to the declining status of salmon,
13 in that harvest rates have declined.

14 It talks about there have been variable but weak response of
15 the salmon stocks to the cutback in harvest. It talks about the
16 hatchery section. It talks about how much of the production of
17 salmon in Puget Sound comes from hatcheries now, which were put
18 in as a substitute I think for declines in habitat, how much of
19 the harvest depends on hatchery production now. I didn't go into
20 a great deal on the habitat other than to say the loss of habitat
21 and the loss of quality of habitat is generally considered to be
22 the major factor for the general decline in salmon.

23 Ocean survival is -- I talked about ocean survival. It is a
24 factor that greatly affects how we have to manage salmon, and it
25 fluctuates, it is hard to predict. And the combination of ocean

1 fluctuations plus declines in the overall production picture from
2 habitat declines are causing some of the serious problems we see
3 today. And I gave an example of that with the Skagit Chinook.

4 Q All right. Would you look at Section 3 entitled, "Current
5 State of the Salmon Fishery," and also give us a brief summary of
6 that?

7 A This section talks about the case area salmon fishery in
8 general. It has declined over the past 30, 35 years. The tribal
9 fishery increased after the Boldt Decision for a while and then
10 joined the non-treaty fishery in a general decline. This also
11 talks about how harvest opportunities to date increasingly depend
12 on hatchery production, and gave a couple of examples of that
13 specifically from the Tulalip tribes, and talked a little bit
14 about fisheries and non-treaty fisheries as well.

15 And the section also includes a description of how we do
16 harvest management in the case area, talking about Chinook and
17 Coho management and the large North of Falcon discussions and how
18 we manage the other species. And it also talks about the fact
19 that after the Boldt Decision, generally the tribal fishing
20 fleets increased as tribes were able to exercise their right to
21 harvest their share of the harvestable resource.

22 But as the opportunities -- coincident with the decline in
23 opportunity and abundance to harvest fish, the tribal fishing
24 fleets declined. I give an example from Tulalip and an overall
25 data analysis from all the tribes in the case area.

1 Q And would you look at Figure 11, which I believe is what
2 you're talking about, Mr. Rawson?

3 A Yes.

4 Q Would you explain what a unique fishing identification number
5 is?

6 A We record harvest in pretty much all tribal salmon fisheries,
7 as they also do, in non-Indian commercial fisheries, anyway, on
8 fish tickets. And fish tickets include the identification of the
9 person fishing, and they're identified with a number. So a
10 unique combination of an identification number plus a tribal
11 designation would give you an individual person. So that's how
12 you count the number of people that are fishing.

13 Q And I take it, then, Figure 11 means that number is
14 declining?

15 A Yes.

16 Q And you state in the caption to that figure, quote, "The
17 straight line shows the linear trend of the data," unquote.

18 What does the linear trend of the data mean?

19 A What that means is it's the best statistical fit of a
20 straight line to the points that make up the non-straight line on
21 there. That wavy line is made up of an individual point
22 representing the number of unique tribal fishers for each year,
23 and that straight line would be the best statistical fit of a
24 straight line to those points.

25 Q And Section 4, entitled, "What are the Implications for

1 Tribal Fisheries?" is, what, your conclusions essentially?

2 A It's what it states, right. Those are my conclusions from
3 the other information presented before that.

4 Q And can you tell us what the first conclusion is and what
5 that means?

6 A I looked at the factors causing the decline in salmon stocks
7 and concluded that the decline is mainly a result of the loss of
8 the habitat that the fish need and a degradation of the quality
9 of the habitat that remains.

10 Q Now, Mr. Rawson, would you look at Paragraph 5? You
11 understand that this paragraph in its original form was excluded
12 by court order? You understand that?

13 A Yes, I do.

14 Q And what did you do in this revised version? What have you
15 changed? How did you arrive at the changes? What data did you
16 use, and so on?

17 A Okay. Let me talk a little bit about what was there
18 originally. What was there originally was an existing approach
19 to the problem of estimating -- projecting the amount of
20 additional salmon production that could be produced from opening
21 habitat above culverts that are currently blocking habitat.

22 And in my work, many salmon biologists' work, if we can use
23 an existing approach that is determined to be valid, then we do a
24 better job of being compatible with other work that has been
25 done, rather than inventing a new approach to something. So

1 that's the way that I would normally go about it. So that's the
2 way I went about it here.

3 But the question is, was that existing approach valid,
4 especially in terms of estimating the amount of production
5 potentially above blocking culverts? So I reviewed available
6 literature for -- let's just say in the existing approach, we had
7 some documentation in the documents that we had for the numbers
8 that were used, and other numbers were given without support.

9 So especially for the numbers that were given without
10 support, I reviewed available literature available to me to see
11 if those numbers made sense. As I went through in my original
12 testimony, I had determined that those were within the likely
13 range. Now that was -- those numbers came from some work that
14 was excluded by the Court's order, I went back and said what was
15 that range within which I thought that these production factors
16 would lie.

17 So if you look at the redacted version, you can see all the
18 places that I already had references to the literature, they gave
19 me those numbers, and you can see some places where I was using
20 the existing method and the existing results, and I went back and
21 filled that part in, just as I did in the other places where
22 there was no support given in the original source.

23 So I found support for ranges of likely production per unit
24 of newly opened habitat or reopened habitat, and I tried to
25 document why I used the ranges I did and how I used those to

1 derive the ranges in Table 4.

2 Q And so Table 4 now shows new ranges that you determined from
3 the material cited, as opposed to the point value that had fallen
4 out from use of the Waldo numbers; is that correct?

5 A Yeah. Use of the numbers that were in the documents that we
6 had received from the state.

7 Q Are there any others, in your view at least, important
8 changes or additions to the rest of Paragraph 5 that you feel the
9 Court should be informed about?

10 A There is at least one -- Section 5. It is more than one
11 paragraph.

12 Q Sorry. Yes.

13 A On Page 24 of the one that shows changes, I did add a comment
14 on the studies that were done just to say that these studies were
15 done in the real world in the mid 20th century or late 20th
16 century, and they were also done in habitats that were not
17 totally trashed, as we might say; you know, heavily impacted.

18 So they were done in habitats that were considered to be
19 pretty good in general, but they were also done at a time when
20 habitat was not pristine, as it was maybe at the beginning of the
21 19th century. And also they were done in places where predators,
22 competitors, other things that affect the fish were present.
23 That, I have added also since I was doing this work myself. I
24 felt it was important to make that comment.

25 MR. MORISSET: That's all the direct examination I have,

1 your Honor.

2 Wait. I'm sorry.

3 By Mr. Morisset:

4 Q We were discussing earlier, I think you were present, Exhibit
5 AT-007-2 and -3.

6 Would you explain in your own words what those were, the two
7 attachments to your report?

8 A I believe I know what you're -- I can talk about the two
9 attachments to my report. Those numbers mean nothing to me.

10 Following the guidance I had, I was asked to provide anything
11 that I cited or relied on that would not be readily available to
12 the Court, to the state, and those were two items that I felt
13 would not be. That's why I attached those.

14 THE COURT: Those are Attachments 1 and 2?

15 THE WITNESS: Yes.

16 By Mr. Morisset:

17 Q So other items in the footnote, for example, in your report,
18 you didn't attach because those were readily available?

19 A Yes. And all they would have to do is ask me.

20 MR. MORISSET: Thank you, your Honor.

21 THE COURT: Cross-examination?

22 MR. TOMISSER: Your Honor, before I begin the
23 cross-examination of Mr. Rawson, I would like to take advantage
24 of the Court's offer to have a chance to read the material before
25 we try and address the offer of proof to reintroduce that.

1 THE COURT: Understood.

2 CROSS-EXAMINATION

3 By Mr. Tomisser:

4 Q Good afternoon, Mr. Rawson.

5 A Good afternoon.

6 Q I would like to start, if we could, in talking a little bit
7 about, broadly, some of the areas you discussed in your report.
8 You mentioned a number of different efforts that have to be made
9 in order to assist in the recovery of salmon.

10 You mentioned, I think, hatchery reform, habitat protection,
11 improvement, things along those lines; is that correct?

12 A Yes, it is.

13 Q Do you believe that in order to successfully promote salmon
14 recovery and restoration on a scientific basis that we are
15 presented with a very complex problem?

16 A Do I believe we're presented with a very complex problem in
17 the problem of salmon recovery?

18 Q Yes.

19 A I certainly do.

20 Q It requires experts from a variety of fields to address; is
21 that correct?

22 A Yes, it does.

23 Q Part of the solution would be in the area of habitat
24 improvement protection; is that right?

25 A I believe a major part of the solution is going to have to be

1 protection of existing habitat that's still productive and
2 restoration of a whole bunch of habitat that has been lost, yes.

3 Q And hatchery reform was also part of the equation; is that
4 right?

5 A Well, certainly improvement of hatchery practices where
6 warranted is definitely important.

7 Q How about hydropower in the case area; is that an element
8 that needs to be addressed as well?

9 A Blockage of habitat from hydropower facilities can be
10 important. It's -- often in Puget Sound, we lump that as part of
11 the habitat equation, but it's part of it.

12 Q And finally, harvest management would be the fourth element
13 of that equation; is that correct?

14 A Yes, it is. I talk about that in my testimony.

15 Q Is it the goal of harvest management to regulate the harvest
16 in such a way that we try to promote healthy and sustainable
17 populations of fish?

18 A The goal of -- what you stated might be a goal if we have a
19 healthy and sustainable population to maintain it in that state.
20 But for many of our salmon that have declined to the seriously
21 low levels where they are, I state our goal of harvest management
22 is to not impede the possibility of recovery when the actions and
23 the other agents that are necessary take place, so there's a
24 difference.

25 Q Do you agree with me that when we look at the challenge of

1 restoring salmon, you need to look at the system as a whole?

2 A I certainly do. You always have to look at the system as a
3 whole.

4 Q Is it correct that it is too simplistic to rank one type of
5 restoration versus another?

6 A I don't understand that question.

7 Q If we look at kind of the whole range of salmon recovery
8 efforts that might be made - hatcheries, habitat, harvest, and
9 all the various things that then come under those categories -
10 would you agree with me that it's simply too simplistic of an
11 approach to pick out one of those elements and rank it above all
12 of the others?

13 A I stated before and I will state now that we need to take
14 significant action in all the Hs, as we are to one degree or
15 another, for salmon recovery to happen, yes.

16 Q It needs to be a coordinated plan; is that right?

17 A Our plan is that we do have coordinated plans, where we have
18 recovery plans. If you mean the harvest management actions and
19 the hatchery actions and the habitat actions have to be designed
20 so they work together, that's certainly true.

21 Q And you've stated that on many occasions, I believe, is that
22 right, your belief in the statement that you just made?

23 A I think I've stated that on many occasions, yes.

24 Q So to return to my earlier question along this line, would
25 you agree with me that it is simply too simplistic an approach to

1 pick out one of the elements involved in salmon restoration and
2 rank that above any other effort that might be made?

3 A I might be more inclined to say it is not going to work if we
4 leave out a significant element in the equation.

5 Q Mr. Rawson, you had your opportunity -- had an opportunity to
6 be deposed in this case a number of times?

7 A Four, I think. Ms. Woods knows the exact number.

8 Q Do you recall, Mr. Rawson, testifying in a previous
9 deposition it was in fact too simplistic to rank one type of
10 restoration effort over another?

11 A I don't necessarily recall that. I probably said that.

12 Q That's true?

13 A That's true.

14 Q Thank you. You mentioned also a moment ago, Mr. Rawson,
15 there were these kind of comprehensive and coordinated plans in
16 place; is that right?

17 A We have certainly comprehensive plans for listed species such
18 as Chinook salmon, Hood Canal summer Chum. I think someone's
19 working on one for Puget Sound Steelhead. We have less
20 comprehensive plans in place for the species that aren't listed
21 under the Endangered Species Act. We don't have those well
22 developed yet.

23 Q For the plan you mentioned, I think you mentioned the Chinook
24 plan?

25 A I did.

1 Q Can you describe the elements of that plan to the Court?
2 What is involved with that plan?

3 A Well, what's involved with that plan, I think, are the things
4 that we have just been talking about: harvest management,
5 hatchery management, and mainly habitat restoration, and the need
6 for habitat protection, which has been identified as a gap in the
7 plan which is being worked on right now. It is comprehensive in
8 the sense that it includes all of the elements.

9 Q And do you know over what time period this plan is intended
10 to operate?

11 A Well, yes. I know that it has been stated that it is a
12 50-year plan, and I know that these specific actions in many of
13 the watersheds -- the plan is organized by watersheds also. Many
14 of the watersheds have a ten-year action plan.

15 Q And you say the plans are organized by watersheds. Can you
16 explain what you mean by that? How are they organized by
17 watersheds?

18 A There are 14 watershed drainage areas, or the watershed
19 drainage areas in Puget Sound are divided into 14 different areas
20 in the plan, and each one has a chapter in the recovery plan that
21 talks about specific actions to take place within that watershed.

22 Q And are there technical experts, state and tribal experts,
23 that sit on each of those watershed groups?

24 A There are groups in each watershed. I hadn't mentioned
25 those. The watersheds are all organized differently. Many or

1 most of the watersheds do have a group of technical experts, and
2 most of those -- as far as I know, they all include
3 representatives from the tribes, and most, if not all, include
4 representatives from the state, as well as other organizations.

5 Q Is it your understanding that each watershed may be somewhat
6 unique in terms of what is needed for that particular watershed
7 and species that may make use of that watershed?

8 A Yes. Each watershed is unique, that's right.

9 Q Let me talk a little bit about habitat, which is one of the
10 elements that you had discussed in your direct testimony
11 submitted to the Court. Is it correct that within -- as we refer
12 to habitat restoration generally, that that encompasses a large
13 number of things that might have to be done in order to assist
14 salmon? Culverts is one of them. Riparian conditions, water
15 temperature, water flow, are all those things kind of under the
16 umbrella of what we would call habitat restoration?

17 A Yes, all of those things and more.

18 Q What else do you think falls under the habitat umbrella?

19 A I didn't write down the whole list. There are other
20 things -- I didn't copy down the whole list that you gave.

21 Q But there are more?

22 A I'm sure there are more, yeah.

23 Q So is it correct, in your understanding, Mr. Rawson, that
24 habitat in a situation would vary tremendously within the case
25 area in terms of is it good, fair, or poor habitat for salmon?

1 A You asked if it is my understanding if habitat varies in the
2 case area, whether it is good, fair or poor. Well, certainly it
3 does. It is my sense that -- I am not a -- it is my sense that
4 much of it is degraded and needs to be restored to a better
5 condition to be more productive for salmon.

6 I mean, there is some that some of the habitat specialists
7 might currently call good. Yeah, there is probably a bunch of
8 that.

9 Q When you say much of the habitat may be degraded, what does
10 that mean, "habitat degraded"?

11 A Well, just in general it means that characteristics of the
12 habitat that are necessary to promote survival and abundance of
13 fish at various life stages have changed so they don't promote
14 survival for fish at various life stages. I'm talking about
15 habitat that is available but degraded.

16 For example, if something's changed, trees along the
17 shoreline, or a source of cold water is no longer there, then
18 water temperatures have gone up and survival of fish will go
19 down. That is one example.

20 If gravel sizes have changed or the sediment is getting in
21 spaces in gravel where the fish can't spawn, that's another
22 example of a degraded condition.

23 Q Is it also the case, Mr. Rawson, that the interaction of the
24 various limiting factors, even within just the habitat umbrella,
25 are complex?

1 A Yes. The interaction of the various factors is complex.

2 Q Let me give you an example that might help our discussion
3 here a little bit. Would it be correct in a situation that, if
4 we had a situation where we had a blocking culvert on a stream
5 that was repaired and opened up some additional habitat, that the
6 productivity of that habitat may be very poor due to any number
7 of other habitat factors that we mentioned previously?

8 A So you're asking if in a hypothetical situation where you
9 have a habitat that is inaccessible that is now made
10 accessible --

11 Q By removing a barrier?

12 A -- by removing a barrier, then you're saying the habitat
13 above the removed barrier might have poor productivity because
14 it's degraded?

15 Q Yes.

16 A And the answer to that, of course, is yes. So what is the
17 result of that? In the condition where that habitat is blocked,
18 there's no production from that habitat. In the condition where
19 it's opened and the production is poor, there's a low level of
20 production. And in the condition where you address all of the
21 factors needed for recovery, the habitat is opened and the
22 productivity is improved and you get a higher production, or
23 something approaching recovery level.

24 Q So as we look at the case area, as a general matter in this
25 case, is it your impression that the majority of habitat that is

1 potentially available through barrier corrections would be
2 degraded even if the barriers were removed?

3 A I have not done a complete assessment of that.

4 Q In fact, Mr. Rawson, you do not know what type of habitat
5 pressure has contributed most to the decline of the salmon in the
6 case area; is that correct?

7 A I have not done an analysis of that. I have certainly seen
8 big picture assessments of the large losses of accessibility to
9 certain kinds of habitat, though, or to habitat in general.

10 Q My question to you was whether or not you know.

11 A I don't have that information right now, no.

12 Q You also do not know how much of the decline in fisheries in
13 the case areas is due to state-owned blocking culverts; is that
14 correct?

15 A In my testimony of October 13th, I talk about how one could
16 estimate that.

17 Q My question to you is: Can you quantify the decline due to
18 state-owned culvert barriers?

19 A I believe, carrying through on that, we could come up with
20 something, but I don't have that number with me, no.

21 Q I will ask you a little bit about stocks of a different
22 species, if I could, in the case area, Mr. Rawson. It is my
23 understanding that you do not know whether the natural production
24 of Puget Sound Chum is below historic levels -- is currently
25 below historic levels?

1 A I don't have an assessment of historic levels, so I don't
2 know that.

3 Q Similarly, you do not know whether the natural production of
4 Puget Sound Pinks is below historic levels, correct?

5 A I don't have an assessment.

6 Q You do not know whether the natural production of Puget Sound
7 Sockeye is currently below historic levels, correct?

8 A I don't have an analysis of that.

9 Q For Puget Sound wild fall Chum, the run sizes in fact are
10 higher this decade, on average, than they were earlier in the
11 century; isn't that true?

12 A They're higher than they were in the 1970s and early 1980s.
13 I'm not sure they're higher than -- earlier in this century, you
14 mean?

15 Q Yes.

16 A This century. That's more recent stuff. Wow. You mean nine
17 years ago?

18 Q Yes.

19 A They have fluctuated quite a bit, according to the evidence
20 I've been shown. I think they're up and down in this century.

21 Q And today they are higher than they were earlier in the
22 century, correct?

23 A I don't have that analysis to know that. I know that Puget
24 Sound fall Chum have fluctuated quite a bit over the past decade
25 from odd to even years.

1 Q Do you recall telling Ms. Wood in one of your depositions
2 that in fact the Puget Sound wild fall Chum currently have run
3 sizes larger than they were earlier in the century?

4 A I may have. I guess the data would speak for themselves.

5 Q Well, the data -- I assume the data you are referring to is
6 the data you used in response to Ms. Woods' question in the
7 deposition.

8 Would it assist your memory, Mr. Rawson, if I directed you to
9 the page of that deposition?

10 A Was -- 2006 was a very high year. 2007 was a very low year,
11 from the information that I presented, and I had depositions in
12 2006, 2007 and 2009.

13 Q Mr. Rawson, let me show you an excerpt from that deposition
14 and see if that assists you. This is an excerpt from your
15 deposition, Mr. Rawson, I will represent to you. And if you look
16 down at the box for Page 243, you will see a line of questioning
17 beginning at Line 11.

18 A Right. I see that.

19 Q And in that testimony, didn't you in fact tell Ms. Woods that
20 the run sizes currently were higher than they were earlier in the
21 century?

22 A I said at Lines 20, 21, that they're higher in the current
23 decade than they were in the 1970s. I just added the early 1980s
24 here in my testimony. That's what I said right there.

25 Q Thank you. On direct examination, Mr. Morisset also asked

1 you about one of the figures in your direct testimony that dealt
2 with, I believe it was the unique identification of fishing
3 licenses.

4 Do you recall that?

5 A I do.

6 Q That is Figure 11; is that correct?

7 A Yes.

8 Q And is the point that you are trying to make with that, if I
9 understand it, Mr. Rawson, is as the available harvest has
10 declined, we see a decline in the number of fishermen,
11 essentially? Is that a summary of what we should be getting from
12 that chart?

13 A What you should be getting from that is that the number of
14 tribal members fishing has shown a steady decline over a 30-year
15 period.

16 Q And is it your assumption, Mr. Rawson, then, that the decline
17 in the number of fishermen correlates with the decline in the
18 available harvest?

19 A Well, I think that has something to do with it, yes.

20 Q Here I'm showing you on the screen Figure 11 from your chart;
21 is that correct?

22 A Yes.

23 Q But it is not true, is it, Mr. Rawson, to simply form a broad
24 conclusion and say: If there were more fish, there would be more
25 fishermen? That wouldn't be true, would it?

1 A It wouldn't necessarily follow.

2 Q Because it is not a direct correlation, is it?

3 A You couldn't say with 100 percent certainty if there were
4 more harvestable fish, there would be more fishermen.

5 Q In fact, it's not anywhere close to 100 percent, is it?
6 Because in fact, historically, we see numbers of harvest going
7 down and numbers of fishermen going up in some periods; isn't
8 that true?

9 A I don't know. Where do you see that?

10 Q Let me show you an exhibit that has been stipulated to,
11 Mr. Rawson. This is the summary chart of harvest data for the
12 tribal harvest of salmon and Steelhead in the case area.

13 And I think, as you can see from this chart, we had a very
14 significant spike in harvests, it kind of looks like the late 80s
15 and early 90s, with harvest numbers going up rapidly.

16 Do you see that?

17 A I see the harvest numbers going up from the time of the Boldt
18 Decision in the mid '80s.

19 Q And so if we compare that spike to the chart you have in
20 Figure No. 11, even though we have dramatic increases of harvest
21 during that period of time, we see a decline in the number of
22 fishermen in the same point of time, correct?

23 A We see the beginning of the overall decline in the number of
24 fishermen. We've see that, you know, initially there may be a
25 more steady number of fishermen and -- getting geared up to

1 exercise their treaty right to harvest.

2 Q But we have a period of almost 15 years from the Boldt
3 Decision of increasing harvest at the same time we're seeing a
4 decline in the number of fishermen; is that correct?

5 A I see a learning curve for fishermen.

6 Q I'm not asking about a learning curve. I'm just asking
7 what's displayed here on the chart, Mr. Rawson.

8 Do we see a decline in the number of fishermen over a 10- or
9 15-year period from the Boldt Decision at the same time we're
10 seeing increasing numbers of tribal harvests?

11 A We see the beginning of a decline. We see a generally steady
12 number of fishermen for the first part, to begin the overall
13 decline, followed by a precipitous decline.

14 Q Similarly, towards the end of this particular scale, which I
15 could read if I put my glasses on, from about the 2000 period
16 forward, we see a gradual increase in tribal harvest and then
17 essentially relatively constant numbers from them and still a
18 decline in the number of fishermen in spite of that increase here
19 within the last ten years.

20 Is that what is shown on these two charts when you compare
21 them?

22 A Well, if you confine it to the last ten years, you might see
23 more of a stabilization at a level lower than the level 30 years
24 ago.

25 MR. TOMISSER: That's all I have for now, your Honor,

1 pending a chance to review the offer of proof regarding Section 5
2 of Mr. Rawson.

3 THE COURT: Mr. Morisset, anything further?

4 MR. MORISSET: Yes, please, your Honor.

5 REDIRECT EXAMINATION

6 By Mr. Morisset:

7 Q Mr. Rawson, on the watershed action plans that Mr. Tomisser
8 mentioned, is there such a plan for the Snohomish Water Resource
9 Inventory Area -- which is WRIA 7, is it? You don't know the
10 number either?

11 A I know the number. It's 7. That's very good. And there is
12 a plan, yes.

13 Q Does that plan include a component for removal of culverts?

14 A It includes components for opening up habitat, and that in
15 some cases includes removal of culverts, so it's a comprehensive
16 plan, as we discussed earlier.

17 Q And if you know, is there a timeline for that removal of the
18 culverts that would be implicated in this case, known as
19 blocking?

20 A Its timeline for the plan is a ten-year action plan and a
21 50-year longer time horizon. That's what that plan is.

22 Q Is there a difference as to where -- I'm talking about the
23 river now, lower versus higher in the river system, a difference
24 where Chum and Pink spawn as opposed to Chinook and Coho?

25 A Well, the species divide up the habitat according to the

1 different characteristics of the species. Chinook salmon tend to
2 spawn in mainstems, they tend to be larger, and the gravel is
3 larger.

4 Coho salmon tend to spawn more in tributaries, so they need
5 more access to more remote -- or habitats that are farther
6 removed from the main stem in general.

7 Chums will spawn in main stems and tributaries. Pinks will
8 spawn, in the Snohomish, mainly in the mainstem areas, but
9 several of the tributaries as well. So all the species use the
10 habitat differently.

11 Q And so would Coho be more or less affected by blocking
12 culverts because of where they spawn than the other species?

13 A I haven't personally done an analysis of that, but it is my
14 understanding in general that when you have a larger river, you
15 have a bridge. That is my observation, I guess, from driving
16 around. And a smaller stream, you'll have a culvert when a road
17 goes over it. Generally speaking, more Coho spawning habitat
18 will be blocked by culverts than Chinook spawning habitat.

19 MR. MORISSET: Thank you.

20 THE COURT: Mr. Rawson, thank you very much.

21 Counsel, there might be a need to get him back on the stand?

22 MR. TOMISSER: That's correct, your Honor.

23 THE COURT: So if we could -- you've had several
24 depositions. What's another little trip back to court, right?

25 THE WITNESS: Okay.

1 THE COURT: All right. So you may step down. Thank
2 you.

3 We'll go ahead and take our afternoon break at this point in
4 time. But before we do, in terms of our record, let me indicate
5 that AT-007, parts 1 through 4, there is no objection from the
6 state. Part 5 is the one we're still reserving on.

7 007-2 and 7-3, the two attachments, in view of the testimony,
8 the Court will admit them. The weight obviously is something
9 still to be determined. We'll take our break.

10 MR. MORISSET: I'm sorry. I think we may have missed
11 007-1, which was just Mr. Rawson's resume. That was stipulated.

12 THE COURT: That's already in. All right.

13 (At this time a short break was taken.)

14 THE COURT: All right, Counsel. Next witness.

15 MR. STAY: Thank you, your Honor. I would like to call
16 Karen Walter to the stand, please.

17 THE COURT: Ms. Walter, if you could raise your right
18 hand to be sworn in.

19 Whereupon,

20 KAREN WALTER

21 Called as a witness, having been first duly sworn, was examined
22 and testified as follows:

23 THE CLERK: Please state your full name and spell your
24 last name for the record.

25 THE WITNESS: My name is Karen Walter, K-A-R-E-N,

1 W-A-L-T-E-R.

2 THE COURT: You may inquire.

3 DIRECT EXAMINATION

4 By Mr. Stay:

5 Q Ms. Walter, where are you employed?

6 A I am currently employed with the Muckleshoot Indian Tribe
7 fisheries division in the habitat program.

8 Q And how long have you been employed there?

9 A Since 1992.

10 Q And in that position, currently what are your job
11 responsibilities?

12 A My primary responsibilities are to be involved in projects --
13 new development, redevelopment that's undergoing environmental
14 review, and the permitting in the interest of reviewing these
15 projects to protect and restore the habitat, the freshwater
16 environments of the Muckleshoot usual and accustomed area.

17 Q Do any of these reviews that you've just mentioned involve
18 any state-owned highways or roads and culverts?

19 A Yes.

20 Q In relationship to those items, state roads and culverts,
21 what is the nature of your involvement?

22 A For those projects that are undergoing environmental review
23 and permit review, again, I am evaluating those particular
24 projects to determine their potential impacts on fish habitat and
25 propose mitigation measures for those impacts.

1 Q What is your educational background, please?

2 A I have a Bachelor's of Science degree in forestry and
3 wildlife management from Virginia Tech. I have a Master's in
4 marine affairs, with an emphasis on fisheries management, from
5 the University of Washington.

6 Q Did you prepare a declaration and written direct testimony
7 for this proceeding?

8 A Yes.

9 MR. STAY: Madam Clerk, if I could ask you to hand to
10 the witness Exhibit AT-009.

11 By Mr. Stay:

12 Q Do you have it?

13 A Yes.

14 Q The first document, is that a declaration of Karen Walter?

15 A Yes.

16 Q Do you recognize that?

17 A I do.

18 Q And on the second page, this signature, is that signature
19 yours?

20 A Yes.

21 Q And attached to that declaration is a document entitled,
22 "Written Direct Testimony of Karen Walter, Watersheds and Land
23 Use Team Leader, Muckleshoot Indian Tribe," dated April 3rd,
24 2009.

25 Do you recognize that?

1 A Yes.

2 Q Is that what you intend to be your written and direct
3 testimony in this proceeding?

4 A Yes.

5 Q Do you adopt that as your written testimony this morning --
6 or this afternoon, I guess?

7 A I do.

8 Q Since the time that that declaration was written and
9 submitted, did you find an occasion to need to make a correction?

10 A I did.

11 Q And what page would that correction appear on?

12 A On Page 5 there is a section discussing the I-4 program and
13 the number of culverts within the Muckleshoot usual and
14 accustomed that have been repaired since 1992 using that program.

15 Q The reference there is to the 2000 progress report?

16 A Yes.

17 Q Is that progress report something you consult regularly or
18 consult in your job responsibilities as it pertains to culverts
19 and state highways?

20 A That report and the other annual reports when they're
21 available.

22 Q So you've looked at reports as they've come out in the past?

23 A Yes.

24 Q Those are the kind of documents that you would regularly look
25 at in terms of your work?

1 A Yes.

2 Q What are the -- what is the correction that you would like to
3 make on that page, Page 5?

4 A There are a couple. First, on Page 5, I noted that since
5 1992, using the I-4 program funding from the data in the 2008
6 Fish Barrier Passage Progress Report, that there were six
7 culverts in the tribe's usual and accustomed area.

8 During deposition, Mr. Shaftel reminded me that, in fact,
9 were there not eight culverts within the tribe's usual and
10 accustomed area from that particular table, Table 3? I went back
11 and reviewed the table, and that is correct. There are eight
12 culverts that have been repaired in the tribe's usual and
13 accustomed area using I-4 funding, as reported in the 2008
14 progress report.

15 The analysis that's described on Page 5 in that section was
16 used to then estimate an approximate rate of correction for the
17 culverts within the tribe's usual and accustomed area. Again,
18 during deposition, I was reminded by Mr. Shaftel that the 230
19 culverts referenced there reflected the culverts in their
20 entirety within the usual and accustomed area, including those
21 culverts that may be determined as having limited habitat
22 benefits, or habitat upstream of 200 meters or less, and
23 suggested that perhaps I remove those culverts from the 230.

24 I went back and looked at that information and determined
25 that there were 41 culverts of that nature, which then reduced

1 the number of culverts with significant habitat upstream greater
2 than 200 meters to 189 culverts. So if you take the 189 culverts
3 and you apply a culvert repair rate of approximately one culvert
4 per year, which reflects 16 culverts over 16 years, the result
5 then is it will take 189 years to fix the culverts within the
6 Muckleshoot usual and accustomed area using the I-4 program as
7 well as the other funding source programs that have significant
8 habitat of 200 meters or more upstream.

9 MR. SHAFTEL: Your Honor, I have an objection to this
10 part of her testimony. I'd like to move to strike her testimony
11 that she's made on this answer so far, as well as her testimony
12 from the existing declaration on Page 5 regarding the same
13 estimate.

14 When I did in fact depose Ms. Walter in June of 2009, I did
15 in fact point out a number of mistakes in her estimate. And at
16 that time, she said that she was going to modify it in order to
17 make an accurate estimate, at least to the best of her belief an
18 accurate estimate.

19 I deposed her a second time, because she's a rebuttal witness
20 in this case, in August, and asked her whether or not she
21 performed that modification. She said she did not. Mr. Stay at
22 that time informed me that she was in fact working on that and
23 that she was going to be getting me those new calculations.

24 I hadn't seen anything or heard anything from Mr. Stay about
25 that topic until earlier this morning when I received this

1 summary of her new calculations and her new estimate. I'd like
2 them both to be kept out as untimely, but also I'd like them to
3 be kept out under Federal Rule of Evidence 702. It's not the
4 type of testimony that would in fact, by a lay witness, really,
5 in this capacity -- well, I guess that would be under 602.

6 But under Federal Rule 702, she's also not qualified to
7 testify as to the degree of the corrections on behalf of the
8 Department of Transportation. I don't think it is the type of
9 testimony that would be helpful for this Court.

10 MR. STAY: Your Honor, first of all --

11 THE COURT: That's all right, Counsel. I don't need any
12 response. The motion to strike will be denied at this point in
13 time.

14 My understanding is at this point she is correcting several
15 things that were in there. I understand what the state's concern
16 is. Given the motion to strike will be denied, you're still
17 laying a foundation for AT-009.

18 MR. STAY: Yes, your Honor. I want to note for the
19 Court that the state has made a number of objections sort of
20 sprinkled throughout the declaration. In my presentation this
21 afternoon, what I intend to do is ask Ms. Walter certain
22 questions to sort of elicit some summary, but I don't intend to
23 go through section by section.

24 I talked to Mr. Shaftel about this a moment ago, whether or
25 not we wanted to go through the declaration and deal with the

1 objections that are there. My other suggestion would be that I
2 move to admit it based upon what has been said thus far. And
3 then at the end or sometime, we can address those objections as
4 Mr. Shaftel chooses to do. I want the Court to know that there
5 are some objections that have not been addressed as of yet.

6 THE COURT: I understand.

7 Mr. Shaftel?

8 MR. SHAFTEL: I just would like the Court to know that I
9 would in fact like to address the objections before the exhibit
10 is offered.

11 THE COURT: All right. So where are you right now?

12 MR. STAY: Right here. I am prepared to admit -- to
13 request admission of this document based upon the testimony of
14 this witness, that it was hers, she's the one who did the
15 estimate for the testimony that she intends to use in this case
16 with the correction that's been made. So that's where I am right
17 now, your Honor.

18 THE COURT: All right. Why don't we go through that,
19 lay all the foundation you're going to lay, and then we can allow
20 the state to address the very specific objections that they have.

21 MR. STAY: Your Honor, what I intended to do is, to the
22 extent we go through the objections, to address them and lay
23 whatever foundation needs to be made as each objection might come
24 up, rather than try to anticipate what might be said. I don't
25 think there will be a lot of foundation laid for these two

1 things, the hearsay and relevance objections. I imagine you can
2 rule just upon argument. If you need more, the witness is here
3 to provide it.

4 THE COURT: Let me do this. There are an extensive
5 number of objections to AT-009 raised by the state. Let me ask,
6 Mr. Shaftel, if I could have you step to the podium.

7 Mr. Stay, let him address these, and then that might be the
8 quickest way of moving on.

9 MR. STAY: Of course, your Honor.

10 MR. SHAFTEL: To speed things up a little bit, your
11 Honor, I'll withdraw several objections. I'll withdraw the
12 objection to Pages 10 and 11 regarding culvert repairs and
13 existing condition limitations. That was a relevancy objection.

14 I'll withdraw the objection on Page 11, second paragraph.
15 This is one reason cited by WSDOT. It's a hearsay objection.

16 I'll withdraw the objection on Page 15 that says last -- I'm
17 sorry, strike that. I want to maintain that objection.

18 I'll start with Page 11.

19 THE COURT: First paragraph.

20 MR. SHAFTEL: First paragraph. It starts with,
21 "Existing conditions may include the proximity of utilities and
22 non-WSDOT owned culverts," and it goes on to give quite a bit of
23 discussion about why she -- how she believes that DOT chooses not
24 to correct culverts during the course of highway improvement
25 projects due to existing conditions in the vicinity of the

1 culvert. I believe all that's based on hearsay, and they haven't
2 laid a foundation for it.

3 MR. STAY: Do you wish me to respond to each one, your
4 Honor?

5 THE COURT: No. Let me have him lay the objections
6 down, and then I'll have you respond. Page 11, first paragraph.
7 The next one is Page 11, last paragraph.

8 MR. SHAFTEL: Yes, your Honor. Here again,
9 Ms. Walter in this paragraph attempts to summarize her opinion as
10 to what the state's budget is for both -- she just says "funding
11 available." It's not clear what she means there. And then she
12 says what the amount is available for culvert work, using a
13 20-year plan.

14 I've got several objections with regard to that. It starts
15 the period is a 20-year plan, and it ends at the end of the link.
16 And my objections include Federal Rules of Evidence 602, 802,
17 702, the best evidence rule.

18 She doesn't have personal knowledge of this. She merely went
19 to websites, and she obtained this information from the websites.
20 I believe that's hearsay. She also is not qualified to act as an
21 expert witness on behalf of the state as a budget expert, to
22 testify on the topic of budget and what's available, what's not
23 available. And I believe that the best evidence rule should be
24 employed in order to actually use the documents themselves to
25 show what the DOT's budget is instead of providing a summary

1 through someone who is not familiar with those documents.

2 On Page 15, the last full paragraph, the sentence that says,
3 "As noted in WAC 220-110-070," Ms. Walter talks about what's the
4 preferred method of design by the state under the WAC. And my
5 objection there is, again, best evidence, and the cumulative
6 rule. I believe that there is in fact a document in this
7 proceeding that's been stipulated to that addresses that very
8 topic, and it need not be addressed in her declaration.

9 The last objection I have is to the entire section starting
10 on Pages 17 and 18. It starts with, "Stream Crossing, Impacts
11 and Mitigation." Here, Ms. Walter addresses what she believes to
12 be both the impacts that are created by stream crossings and what
13 should be the standards for mitigation; whenever DOT does any
14 work -- well, actually, it's not exactly clear to me what her --
15 when her recommendations would in fact kick in as far as
16 mitigation goes.

17 I believe Ms. Walter will in fact testify that this
18 mitigation should be required for both past and future impacts
19 that road crossings have on stream habitat. I don't believe that
20 -- I guess I would stand on the relevance objection. It seems
21 like that's irrelevant to this proceeding. I don't believe that
22 under any of the requested remedies there's been a request for
23 any sort of mitigation standards, so it doesn't seem to me that
24 that's been an issue that's really relevant in this case.

25 THE COURT: Thank you. Before you step down, did you

1 skip or are you withdrawing your objection to Pages 15 and 17,
2 the section labeled, "Limited Circumstances in a Culvert Repair"?

3 MR. SHAFTEL: Thank you, your Honor. No, I accidentally
4 overlooked that.

5 Page 15 to 17, I am standing on my objections there under
6 Federal Rules of Evidence 701 and 702. I believe that this is
7 also an area outside of her expertise. Ms. Walter's not an
8 engineer. She's commenting on when in fact culverts should be --
9 when different culvert methodologies should in fact be employed,
10 and we have other witnesses that are testifying to that, and
11 she's providing improper testimony on a topic where she's not
12 qualified.

13 THE COURT: Thank you, Counsel.

14 All right. Mr. Stay?

15 MR. STAY: Thank you, your Honor. I was trying to
16 follow what we've taken out. So if I start to argue about
17 something that Mr. Shaftel has conceded, I hope someone will stop
18 me. I hate to move from a win to a loss.

19 THE COURT: I'll tell you, you've won already. All
20 right. The very first one is Page 11, first paragraph.

21 MR. STAY: Thank you, your Honor. To start with, this
22 is not what Ms. Walter does. Her job is to basically interact
23 with the Department of Transportation to examine, look at
24 culverts, to see whether they are or are not blocking, to figure
25 out as a scientist how they might affect salmon and how they can

1 be corrected.

2 In this particular example here, 802, which is an objection
3 on hearsay, these documents that -- she cites in her testimony,
4 they are attached to her declaration, Exhibit 8A in this
5 particular case, and in Exhibit 7. Both of those are attached.
6 Those are governmental documents from the state of Washington
7 Department of Transportation received by her. They would be
8 admissions that can be relied upon. They're an exception to the
9 hearsay rule. And as a result, there's no hearsay objection, and
10 that's the scope of his objection there. It should be denied.

11 With respect to the same page, Paragraph 11, bottom of the
12 page, the citation to the 20-year plan. I can ask, if I might,
13 your Honor, a question to the witness.

14 Ms. Walter, what caused you to look at this 20-year plan?

15 THE WITNESS: I was trying to determine if there was a
16 long-range planning document to indicate the number of culverts
17 that may be repaired in the future, beyond the ten-year scoping
18 plan that's identified in the annual fish progress reports.

19 MR. STAY: Why did you include it in your testimony?

20 THE WITNESS: It seemed to be the type of document that
21 met the criteria that I was looking for, a longer range,
22 something beyond a ten-year scoping plan from the progress
23 reports.

24 MR. STAY: Was the purpose of your introduction to this
25 for the truth or falsity of the numbers that are contained there

1 or as a particular avenue of the Department of Transportation
2 which could have been afforded to you in terms of having
3 consultation?

4 THE WITNESS: I was looking at it as a type of planning
5 document, the kind of document that I normally would like to
6 review in advance. And I was looking at it as both -- does such
7 a document exist, as well as had this document ever been
8 coordinated with the tribe, had we ever had an opportunity to
9 review and/or comment on that particular document.

10 MR. STAY: Had you had?

11 THE WITNESS: No.

12 MR. STAY: So, then, your Honor, on this particular
13 objection, it's not hearsay because it's not being introduced for
14 the truth or falsity of the material therein, but rather as an
15 example of a process that Ms. Walter looked for to see whether or
16 not it was available or whether or not tribes had been afforded
17 an opportunity to be part of it, and they were not.

18 MR. SHAFTEL: Your Honor, I can modify my objection, if
19 you would like.

20 THE COURT: Hang on. Let me -- let us finish here.

21 MR. STAY: On Page 15, I think you -- I don't know if
22 I'm going to thank your Honor for reminding Mr. ShafTEL if he had
23 an objection to the entire section, Section 4, basically 701 and
24 702.

25 Again, Ms. Walter, this is what she does. She is involved in

1 looking at the replacement and the repair of culverts. This
2 particular section talks about the kinds of activities that might
3 allow for a deviation from what she has identified, and Dr. Fox
4 did this morning, as a preferred culvert design method. That's
5 exactly what she needs to do. And it's of course highly relevant
6 to this Court because, in making your decision, you're going to
7 have to know the impacts of what you're doing. And what this
8 tells you is some of the circumstances where there may be an
9 opportunity to deviate from the most preferred standard.

10 I want to point out that in the rules, in terms of experts,
11 experts are wholly capable, and the courts have routinely allowed
12 expert testimony based upon experience. We have a witness here
13 that's been doing this for --

14 I forget, Ms. Walter, how long have you been doing this?

15 THE WITNESS: Direct review of WSDOT projects, since
16 2001 or '2.

17 MR. STAY: Okay. Nine years. She does this all the
18 time, your Honor. I think that it's relevant. This is the type
19 of evidence that an expert would rely on, and Ms. Walter is
20 testifying as an expert, and therefore I would suggest that this
21 objection does not have any merit.

22 Did we drop the hearsay -- we didn't, did we? I've got it.

23 THE COURT: You know, Mr. Stay, I actually don't need
24 argument on the last two. Here's what we're going to do.

25 Starting from the bottom, Page 17 and 18, the objections that are

1 based on 402, 403, 701, 702, that will be overruled. The
2 relevance I think is there. In terms of expert testimony, I'm
3 certainly willing to listen to it and give it whatever weight the
4 Court feels should be given.

5 Page 15, last full paragraph, again, that will be overruled.
6 Page 15 to 17, the entire section labeled "Limited Circumstances
7 with Culvert Repairs" the objections are based on 701, 702.

8 The Court actually wants to hear her testimony in that
9 particular area because I think it may be quite relevant. And I
10 can decide whether or not, in view of all the other testimony in
11 the trial, what weight that should be given.

12 Mr. Shaftel, I'm still wondering, I guess, about Page 11, the
13 last paragraph. You wanted to modify it. But let's do it this
14 way. Let's reserve that one, and we'll let you develop it on
15 cross-examination. All right?

16 MR. SHAFTEL: Sure.

17 THE COURT: The only other remaining one, Page 11, first
18 paragraph, hearsay objection, that will be overruled. So with
19 that one reservation on that one section, we will admit AT-009.

20 Mr. Stay.

21 MR. STAY: Thank you, your Honor. I seem to have
22 misplaced my questions. I'm not stalling, your Honor. I'm just
23 being helped by Mr. Sledd. He's not only tall, he's quite useful
24 in this situation.

25 By Mr. Stay:

1 Q On Page 1 and 2 of your declaration, Ms. Walter, you have a
2 list of projects. There is the first page. The project is there
3 at the bottom, starting with I-405, and then moving to the second
4 page. Tell me, why were those projects included?

5 A These are projects that I've had direct involvement in doing
6 the environmental review and permit review that have occurred
7 within the Muckleshoot usual and accustomed area, where I have
8 direct experience.

9 Q Ms. Walter, in your experience, based upon your experience,
10 can a repaired culvert, even when repaired correctly, result in
11 impacts to the stream, riparian, or fish survival?

12 A Yes.

13 Q And how can that happen?

14 A Basically the culvert is replacing natural spring bed
15 material, and that can be spawning or rearing habitat that
16 exists, which is replaced then with structure. You get a
17 definitive boundary area that then separates the stream channel
18 from its adjacent banks, which could include wetlands and
19 floodplains and types of features we talked about earlier that
20 provide low-velocity habitats necessary for fish production and
21 survival. And the structures may result in the realigning or
22 otherwise modifying of the stream channel, which could create,
23 again, a direct loss of habitat as well as reducing meanders and
24 other features necessary to create sustained fish habitat.

25 You can have shortened channels as a result of, again,

1 streamlining in those culverts, and then you can also result in
2 the permanent removal of trees that can result in loss of habitat
3 from the loss of food sources for insects, shade, wood
4 recruitment, and some functions that we've discussed already.

5 Q And when you have those kinds of problems, what is the
6 appropriate response?

7 A Well, generally, if you are going to have impacts, you need
8 to do mitigation. And there is a process that both the state and
9 federal regulations require co-mitigation sequencing.

10 It basically is where you take the first step, which is to
11 avoid the impact altogether. And then for impacts that you
12 cannot avoid, you try to minimize those impacts. And then for
13 impacts that you cannot avoid or minimize, you then mitigate for
14 those impacts.

15 Q In your testimony, did you have an example of a project --
16 culvert project which had these impacts in which mitigation was
17 applied?

18 A Yes.

19 Q Could you describe it, please?

20 A One of the projects I have listed on Pages 1 and 2 is
21 identified as what is called the I-405 Renton Nickel project. In
22 that particular project, the state was widening the highway where
23 there was an existing five-celled culvert crossing a stream
24 called Springbrook Creek that eventually drains to the Green
25 River. The culvert needed to be modified as part of a road

1 project. The agency proposed to remove that culvert and replace
2 it with a bridge or bridge-like structure.

3 Unfortunately, I think due to some of the engineering
4 constraints and site constraints, a bridge column, a pile, had to
5 be located within the stream channel within the ordinary
6 high-water mark and not outside of that area. So in this
7 instance, we got an improvement over the existing fish barrier
8 structure, but now we also had new structures within the stream
9 channel that would then physically displace habitat where it
10 existed and may also have impacts on habitat up and downstream;
11 features such as scouring, scouring it downstream, sediments, as
12 well as capturing or entraining wood that Dr. Fox talked about
13 earlier today.

14 Q And how was that project addressed by the Department of
15 Transportation?

16 A In the case of that project, the construction impacts
17 generally were mitigated. But in terms of these other impacts
18 that may occur over time due to the pile being within the
19 ordinary high-water mark, as far as I know there is no mitigation
20 proposed for that potential impact.

21 Q Are you familiar with the culvert design methods that Dr. Fox
22 mentioned this morning?

23 A Yes.

24 Q And you were here to listen to his testimony where stream
25 simulation was, at least in his opinion, the preferred design

1 method?

2 A For culverts, yes.

3 Q Do you agree with that?

4 A Yes.

5 Q From your experience, have you seen or developed any
6 information with respect to circumstances where it would be
7 appropriate to deviate from that stream sim standard in
8 particular circumstances?

9 A I have experience where a stream simulation replacement
10 culvert was not possible, and there was a need for a deviation,
11 yes.

12 Q Have you developed any criteria that you would like to
13 suggest to the Court?

14 A Well, in the instance where I have direct experience, there
15 was a suite of factors that came together that I think are shown
16 in the exhibit attached to my testimony whereby, due to the
17 combination of all of those factors, the stream simulation
18 culvert could not be built in that particular stream instance.

19 Q Are you speaking about Thunder Hills?

20 A Yes.

21 Q And I want you to tell the Court about that in a moment.
22 Thank you for bringing it up. I wanted to know whether or not
23 you could identify the circumstances when deviation would be
24 appropriate.

25 A Well, generally speaking, I think you'd want the

1 circumstances to be rare and on a case-by-case instance.

2 Q Do you have any other criteria, any other circumstances where
3 that would take place?

4 A Well, you would have circumstances such as where there was an
5 emergency failure and there was a threat to public safety and
6 life and occupied property, potentially fish life. You may have
7 instances where you need to deviate because, again, you have
8 existing conditions, like with the location of utilities that
9 could not be moved or otherwise modified, again, without creating
10 some public threat or risk safety, as well as there are obviously
11 engineering feasibility issues that may arise.

12 Q Now, getting to the example that you were starting with,
13 Thunder Hills, would you describe where that is and what was
14 going on there?

15 A Thunder Hills Creek is a tributary that eventually drains to
16 the Green River. It's within the City of Renton jurisdiction,
17 and it's conveyed underneath Interstate I-405. In that instance,
18 the culvert failed as a result of flooding in December of 2007.
19 Essentially, it appears the culvert was filled with sediment,
20 other materials, and broke.

21 The result was downstream a sink hole was created, which then
22 threatened the road fill on I-405, then causing of course the
23 state DOT to do an emergency fix to address that concern so there
24 was no loss of roadway or other safety aspects.

25 In that particular instance, again due to the emergency, the

1 fact that we were in December, we had more wet weather probably
2 on the way, the state needed a repair right away. So through the
3 course of conversation with the state DOT and the U.S. Army Corps
4 of Engineers, who issued a permit for that particular emergency
5 work, we were able to come up with an alternative solution
6 whereby -- because of the nature of the combination of factors
7 that a stream simulation culvert could not be replaced at the
8 emergency repair site, a different culvert was to be repaired
9 that was not otherwise to be repaired anytime soon.

10 Q So that second culvert was the mitigation for not doing the
11 stream simulation culvert at Thunder Hills?

12 A Yes.

13 Q You mentioned there was an emergency. You also said there
14 were other factors. What other factors led you to this
15 mitigation solution, as opposed to a stream simulation solution?

16 A Well, in the case of Thunder Hills, it's outlined in -- I
17 think it's Exhibit 8. You had compounding factors between the
18 fact that it was an emergency, so there was a time limit element.
19 You had the location of a main sewer line which could not be
20 relocated, certainly not with ease or without cost. You had a
21 downstream culvert that was smaller than what the stream
22 simulation culvert would have created. So essentially you would
23 have been forcing more water into that smaller culvert. You
24 would have caused flooding on the roadway, and this was an access
25 roadway needed for traffic.

1 And then there were overhead power lines that caused some
2 problems with constructability to do a stream simulation culvert
3 at that site.

4 Q All those factors taken together, then, were what led you to
5 the mitigation solution?

6 A Yes. The demonstration that those factors existed led to the
7 conversation of agreeing that a stream simulation culvert was not
8 possible at the emergency repair site, and then leading to the
9 conversation of doing a replacement culvert somewhere else.

10 Q In order to evaluate the Department of Transportation or
11 other culvert owners' corrections, is there certain information
12 that you need in order to comment intelligently and productively
13 on those projects?

14 A Yes.

15 Q And what kind of information do you need?

16 A Well, in order to do a complete review, I need to understand
17 about what the project is, where it is, what's proposed in terms
18 of construction. I need to know about what streams, rivers,
19 lakes, wetlands would be effected. I need to know if the
20 associated riparian or buffered areas by those water bodies would
21 be affected. I need to know what the water typing or fish use of
22 those streams and wetlands are in the area. And I also need to
23 know if there's some -- the potential for fish use in those
24 areas, and then we need to know the nature and existence of
25 culvert barriers or other barriers within that project area.

1 Q It sounds like you need to know a lot of technical
2 information?

3 A Yes.

4 Q When do you need to get that to make it useful?

5 A I need it as early as possible so we can take a look at that
6 information and verify its accuracy, potentially conduct
7 fieldwork, go visit the site in the field, as well as look at the
8 site and talk about were all the project impacts assessed,
9 assessed correctly, and then start looking at what mitigation
10 opportunities may exist.

11 Q Is it fair to say you need it when it's available?

12 A Yes.

13 Q When it first becomes available?

14 A Yes.

15 Q Available to the agency?

16 A Yes.

17 Q When do you generally get that information now?

18 A Well, it varies by project, but typically it's -- some of it
19 becomes available during the environmental review process under
20 the State Environmental Policy Act or the National Environmental
21 Policy Act, whichever is applicable to that particular project.

22 Q Excuse me. I apologize.

23 A I was going to say, and those processes have set deadlines,
24 in the case of SEPA, the commenting period can be as short as 14
25 days. Assuming you get all the material, you may have 14 days to

1 review it.

2 Q Set aside for a moment the short response time. Getting the
3 information that you indicated you need at that period in the
4 process, how effective will your comments be in terms of being
5 able to modify or impact the project?

6 A Well, it depends on the level of design, but typically when a
7 project is undergoing environmental review through SEPA or NEPA,
8 the project's been designed at least to 30 percent. Oftentimes
9 it's at a 60 percent design level, which in my experience has
10 made it very difficult to make any project changes of any
11 significance.

12 Q In your experience, are those projects funded when you get to
13 that level?

14 A It depends.

15 Q Some yes, some no?

16 A Yes.

17 Q Do you have an example from your testimony that sort of shows
18 how this problem with information plays out?

19 A Well, I've experienced where we received some information
20 initially but then the larger project details later through the
21 SEPA process, whereby you can make a full evaluation of the
22 project in its entirety, and in the process and course of
23 reviewing documents, I've discovered that there were additional
24 reports that may have been referenced but not included in the
25 materials sent that we needed to, again, do this full evaluation

1 to try to understand what the project entails and what the
2 project impacts of the proposed mitigation measures may be.

3 Q Was Clay Creek an example of getting good information or bad
4 information?

5 A Clay Creek on State Route 410?

6 Q Yes.

7 A That's an interesting project, because there was information
8 that was provided early in the sense that we were notified early
9 that something was going to happen out there back in 2003. Work
10 wasn't completed until later this year, and the project went
11 through some iterations. We received some of the information
12 timely, but not all of the information timely.

13 Q Was there any emergency work done there that you were party
14 to or able to assist with?

15 A Yes. This past winter we were informed that there was some
16 emergency work that was completed, but the extent of that
17 emergency work was not provided to us.

18 Q In one of the -- let me stop mumbling and ask a question.

19 In looking at blocking culverts, what is the first thing you
20 really need to do before you can begin your process of examining
21 culverts? What kind of assessment needs to be done?

22 A Well, we need to make sure that we have all the water bodies
23 accounted for that could be affected. We need to verify whether
24 or not those water bodies do and/or could support fish.

25 Q If you have a blocking culvert, could you have a situation

1 where there would be no fish present above the culvert but yet
2 the water body would support fish if the culvert were removed?

3 A Yes.

4 Q How do you assess that area above the culvert that has no
5 fish presently?

6 A The methodology that we use at the Muckleshoot fisheries
7 division is we assess those situations using the physical
8 criteria for presumed use in streams that's found in the Forest
9 Practices Act administrative code.

10 Q Is that a process that's used by the Department of Natural
11 Resources?

12 A Yes.

13 Q Do you find that to be an adequate process?

14 A Yes.

15 Q Is that the process that's used by the Department of
16 Transportation?

17 A Not to my knowledge.

18 MR. SHAFTEL: Objection; calls for speculation.

19 MR. STAY: If she knows, she knows.

20 THE COURT: Overruled.

21 By Mr. Stay:

22 Q Your answer was?

23 A Not to my knowledge. I haven't seen DOT's information
24 written up that would lead me to that conclusion clearly.

25 Q And one last short area before I quit. Are you familiar with

1 a Memorandum of Agreement between the Department of
2 Transportation and the Department of Fish and Wildlife?

3 A Yes.

4 Q From your experience, how has the implementation of that MOA,
5 if I might, affected the ability to correct culverts under
6 Department of Transportation rules?

7 A The MOA, Memorandum of Agreement, between the State
8 Department of Transportation and the State Department of Fish and
9 Wildlife lays out a general process by which the state DOT will
10 be required to fix culverts as part of road projects.

11 The general rule of thumb is that if the road project would
12 modify a particular culvert, and the culvert is a fish barrier,
13 then it needs to be made fish passable as part of the road
14 project. If there are road culverts that are fish barriers that
15 are within a project that will not be modified, the DOT is given
16 discretion as to whether or not they will fix those particular
17 culverts as part of the road project.

18 Q If the Department of Transportation decides not to fix a
19 culvert, part of the road project, because we're not touching it
20 at the time, will that have an impact on the ability to correct
21 that culvert in the future?

22 A It may. With road projects, you can get increases in
23 roadfill. You can get changes in roadway interchanges. You can
24 get utilities relocated. All of those factors can then affect
25 the ability to repair that culvert in the future or at all. It

1 can also repair the type -- it can also affect the type of repair
2 for those particular culverts in the future.

3 In other words, you may not be able to do stream simulation
4 culvert because of those factors, and then you're stuck with
5 either a no-slope or a hydraulic option instead.

6 Q You mentioned a moment ago the I-405 Renton Nickel project.
7 How many culverts were identified in that project as being --
8 identified by the state as being blocking culverts?

9 A Eleven.

10 Q And how many were corrected as part of that project?

11 A One.

12 MR. STAY: No more questions, your Honor.

13 THE COURT: Cross-examination?

14 CROSS-EXAMINATION

15 By Mr. Shaftel:

16 Q Good afternoon, Ms. Walter.

17 A Good afternoon, Mr. Shaftel.

18 Q How are you?

19 A I'm fine.

20 Q Good to see you again.

21 A Good to see you.

22 Q Ms. Walter, you work for the Muckleshoot Indian Tribe; is
23 that correct?

24 A Yes.

25 Q And in fact, you've worked for the Muckelshoots for quite a

1 long time?

2 A Yes.

3 Q In fact, that's your area of expertise, is in the Muckleshoot
4 U&A?

5 A My current expertise, yes.

6 Q Thank you. Which WRIAs are encompassed within that usual and
7 accustomed area?

8 A The Water Resource Inventory Areas, otherwise known as WRIAs,
9 8, 9 and 10 are within the Muckleshoot usual and accustomed area.

10 Q Thank you. If you'll take a look at your screen, Ms. Walter.
11 What I'm showing you here is a picture of a case area of all 23
12 WRIAs. Here you're only testifying about projects that you have
13 had experience with in 8, 9 and 10, and that is down near the
14 Clallam. I'm sorry. I can't make out the -- is that the Cedar
15 River near 8?

16 A Yes, the map showing the Cedar River in WRIA 8.

17 Q Okay. And so you won't be providing an opinion about any
18 experiences you've had in any of the other WRIAs, I take it; is
19 that correct?

20 A Yes.

21 Q You don't know what WSDOT -- what WSDOT's practices for
22 correction are in any of the other WRIAs, do you?

23 A I have no reason to have that knowledge.

24 Q Nor do you have any knowledge about the DOT's outreach
25 efforts to the tribes in those other areas?

1 A No.

2 Q You didn't have any of the other tribal representatives
3 review your declaration before you signed it and provided it for
4 your testimony here today, did you?

5 A I did not.

6 Q So you don't have any idea whether or not any of the other
7 tribes in fact agree with the conclusions that you've arrived at
8 in your declaration?

9 A I don't.

10 Q Now, you mentioned stream typing as the first step in which
11 the DOT tries to in fact determine what culverts -- I'm sorry,
12 which streams are fish bearing when they're performing a highway
13 improvement project; is that correct?

14 A Generally, yes.

15 Q And what I heard you testify to here today was that you
16 believe that the best way to perform that stream typing was to in
17 fact use the physical criteria outlined in WAC 222-16-031-3, is
18 that correct -- I'm sorry, parenthetical 3. Is that correct?

19 A In instances where you have a known fish barrier and you have
20 known fish data, yes.

21 Q But you don't have any idea as to whether or not DOT in fact
22 uses that criteria?

23 A I have no basis to have that knowledge. I haven't seen it
24 written that way in the reports that I've reviewed.

25 Q So you have no personal knowledge on that topic; is that

1 correct?

2 MR. STAY: Your Honor, I object. That's not her
3 testimony. What she was saying is that she has no reason to
4 believe that's being used because it doesn't show up in any of
5 her reports as being used.

6 THE COURT: Thank you, Counsel.

7 I think she's answered your question.

8 By Mr. Shaftel:

9 Q Are you aware that the Department of Transportation -- or the
10 Department of Fish and Wildlife, rather, has performed an
11 inventory of all the DOT culverts?

12 A I'm aware that DFW has prepared an inventory. I hope it's
13 all the culverts.

14 Q And when they in fact identify a culvert, they make a
15 determination as to whether or not the stream on that culvert is
16 in fact a fish barrier.

17 Are you aware of that?

18 A I believe that's part of the assessment that they do, yes.

19 Q And isn't it true that in fact when DFW goes out and makes
20 that determination, that they use the physical criteria which we
21 were discussing?

22 A I believe that's the case. That information isn't usually
23 written up and presented in the documents that we receive and
24 review during environmental review. So if there's a separate
25 report that contains that information, that has not generally

1 been transmitted to us for our review.

2 Q So the issue is not that you have a strong opinion one way or
3 another as to whether or not DOT in fact uses that physical
4 criteria but just that you haven't seen the documentation that
5 would evidence it?

6 A Yes.

7 Q Now, the Muckleshoot U&A, or the Muckleshoot usual and
8 accustomed fishing places, those are largely within an urban
9 area; is that correct?

10 A There are urban areas within the Muckleshoot usual and
11 accustomed area.

12 Q And as a result of it being in these urban areas, the habitat
13 within those urban areas are some of the -- contain high amounts
14 of degraded habitat; is that correct?

15 A There are areas of degraded habitat within the Muckleshoot
16 usual and accustomed area, yes.

17 Q In fact, it's got some of the highest amounts of degraded
18 habitat in the case area?

19 MR. STAY: Objection to the form of the question, your
20 Honor.

21 THE COURT: The objection to the form is sustained.
22 By Mr. Shaftel:

23 Q Isn't it true that the Muckleshoot U&A contains some of the
24 highest amounts of degraded habitat in the case area?

25 MR. STAY: Same objection.

1 THE COURT: She may answer if she knows.

2 THE WITNESS: It may. I haven't compared the other
3 watersheds because, as we discussed previously, I've no reason to
4 be working outside of the WRIAs within the Muckleshoot usual and
5 accustomed areas, so I'm not necessarily familiar with the
6 conditions of the degraded or non-degraded habitat in the rest of
7 the case area.

8 By Mr. Shaftel:

9 Q Would you describe that the majority of the habitat within
10 the Muckleshoot U&A is in fact degraded?

11 A The majority?

12 Q The majority.

13 A Could you define that further?

14 Q Over half.

15 THE COURT: If you know.

16 THE WITNESS: Half being for every aspect of habitat?
17 Half for some factors? I'm not sure what you're trying to ask.

18 By Mr. Shaftel:

19 Q All I'm asking is whether or not, in your opinion, that the
20 habitat within the Muckleshoot U&A, the majority of it is in fact
21 degraded.

22 A As I said earlier, there is degraded habitat within the
23 Muckleshoot usual and accustomed area.

24 Q But that wasn't the question that I asked.

25 A I'm not sure if you wanted to say there was -- I mean, it

1 would depend on how you want to qualify "habitat." If you want
2 me to lump it all into one section and say that the majority of
3 habitat features or factors that are degraded, you know, it's
4 going to depend on the streams we're talking about.

5 I mean, I guess I'm just not understanding your question very
6 well.

7 Q If you were to describe the quality of habitat in the
8 Muckleshoot U&A, would you agree that the general description is
9 that it's fairly degraded due to the fact that it's in densely
10 populated areas?

11 MR. STAY: Objection, your Honor. He has to define the
12 term "fairly."

13 THE COURT: Do you understand the question?

14 THE WITNESS: I think so. I think what Mr. Shaftel is
15 trying to get me to say is that there is a lot of degraded
16 habitat within the Muckleshoot usual and accustomed area that
17 arguably needs restoration.

18 And, again, I would say that it depends on which stream areas
19 we're talking about. Yes, there are some areas that are degraded
20 as a result of what appears to be a large human population
21 causing impacts upon that habitat. There are areas that are not
22 so degraded. The ratio between those, I mean, it would depend.

23 We could talk about every stream in the WRIAs, and we may
24 come up with a little different answer for each. There are large
25 restoration needs in the Muckleshoot usual and accustomed area,

1 the streams and rivers for sure. I'm just -- I guess I'm just
2 not sure how I'm going to proceed with quantifying. Are we going
3 to talk about everywhere, or would you just prefer some general
4 statements?

5 THE COURT: I think that's as far as you're going to be
6 able to push her on that one, Counsel.

7 MR. SHAFTEL: And that's as far as I wanted to take it.
8 Thank you, your Honor.

9 By Mr. Shaftel:

10 Q Now, you say you modified Page 5 of your declaration; is that
11 correct?

12 A That's right.

13 Q And on Page 5, what you did is you took a pace -- you
14 calculated a pace of correction for the Department of
15 Transportation based upon the fish passage inventory report for
16 2009?

17 A 2008.

18 Q Oh, I'm sorry. 2008.

19 A Yes.

20 Q Are you aware that they've published one for 2009?

21 A Yes. But it was produced after my testimony.

22 Q You modified your opinion just this morning?

23 A I modified my opinion using the 2008 data since that was the
24 data set that you and I discussed during my declaration --
25 deposition.

1 Q So you haven't looked at the 2009 report yet?

2 A I have not.

3 Q And using the 2008 report, you essentially looked at the
4 corrections that were made in the stand-alone I-4 program for
5 area corrections to determine the pace of correction in the
6 Muckleshoot U&A?

7 A Yes.

8 Q But you didn't look at the corrections that were made outside
9 of the I-4 funding source?

10 A In my initial assessment, I did not look at the other funding
11 sources table that's also in the 2008 progress report.

12 Q And did you do so in your amended assessment?

13 A Yes.

14 Q And how did you treat those other corrections in the other
15 funding sources?

16 A The other funding sources can be found in Table 4. If you go
17 through that list, there are 36 projects within the Muckleshoot
18 usual and accustomed area that are identified in Table 4. If you
19 look further at the table, it is noted as to which projects
20 resulted in repair and which ones did not simply by a "yes" or
21 "no."

22 So of those 36 projects listed in Table 4, there were eight
23 that were identified as "yes," which I treated as them being
24 repaired, to add to the other eight projects from the I-4
25 program, to give you a number of 16 total within the Muckleshoot

1 usual and accustomed area.

2 MR. STAY: Mr. Shaftel, is that an exhibit in this case
3 you're looking at?

4 MR. SHAFTEL: Yes, it is. It's the 2009 Fish Passage --

5 MR. STAY: Does it have an exhibit number?

6 MR. SHAFTEL: I don't think so.

7 MR. STAY: But it is an exhibit?

8 MR. SHAFTEL: Yes.

9 By Mr. Shaftel:

10 Q So in order to double-check your work, which I haven't had
11 the opportunity to do, we would need to go through all the
12 corrections identified on Table 4 -- or I'm sorry, here it's
13 Table 5 in the 2009 report.

14 Is that the same table -- does that look to be the same table
15 that you looked at in your calculation?

16 A I used two tables, Tables 3 and 4 from the 2008 report.

17 Q And here you see a Table 5?

18 A Yes.

19 Q And it says "Fish passage projects completed through other
20 funding sources"?

21 A Yes.

22 Q Is that the same title as Table 4 from the 2008 report?

23 A Yes.

24 Q And so you took the column on the right-hand side here, and
25 you just went through and you looked for your corrections; is

1 that correct? I'm sorry. When I say "your corrections," you
2 looked for ones that have been performed in the Muckleshoot U&A?

3 A I started by looking at the column entitled "WRIA." Those
4 have numbers listed. Those reflect the watershed areas where
5 those culverts are. And I pulled out which culverts would be
6 reflected in a number starting with at least 8, 9 or 10.

7 Q So if I wanted to, or the Court wanted to check the work on
8 this, the Court -- we would just go through and we would look for
9 8, 9 or 10, and then we would go across, "Did the fish pass
10 satisfactory?" "Yes" or "no." And then what you did is you
11 counted the ones that said "yes" and counted the ones that said
12 "no"; is that correct?

13 A I did not include the ones that said "no" in calculating the
14 rate. I did include the ones that said "yes."

15 Q For the ones that said "no," do you have any personal
16 knowledge of what prevented those particular corrections from
17 being successful?

18 A I don't.

19 Q Is it possible that for those ones, in fact, it would be a
20 very limited amount of work that would be needed in order to make
21 those fish passage projects successful?

22 MR. STAY: Objection, your Honor. Calls for
23 speculation.

24 THE COURT: Sustained.

25 By Mr. Shaftel:

1 Q Now, another thing that we talked about, and this comes back
2 to the degradation issue -- habitat degradation issue we talked
3 about earlier, is the I-4 program in fact works on a basis of
4 prioritization, which focuses on getting the most benefit to the
5 fish early on by using a priority system.

6 Are you aware of that?

7 A Yes.

8 Q And that priority system in part incorporates the amount of
9 high-quality habitat that's upstream from the barrier that's the
10 barrier to fish.

11 Are you aware of that?

12 A That's one factor used to calculate the PI.

13 Q In fact, it's one the strongest factors that calculates the
14 PI; isn't that true?

15 A It may be.

16 Q And so if in fact that's true, then -- and if in fact it's
17 true that the Muckleshoot U&A has higher levels of degraded
18 habitat due to being in an urban area as compared to rural areas
19 in the case area, wouldn't it also be true if the DOT is in fact
20 fixing higher PIs before it gets to lower PIs, that the rate of
21 correction for the Department of Transportation would speed up as
22 it goes down the list as far as the rate within the Muckleshoot
23 U&A?

24 MR. STAY: Objection, your Honor. That assumes evidence
25 not in the record. She did not talk about relative habitat in

1 rural areas.

2 MR. SHAFTEL: I am in fact asking her to make an
3 assumption for this theoretical.

4 MR. STAY: There is no basis for this assumption.

5 THE COURT: The objection is sustained.

6 By Mr. Shaftel:

7 Q So you have no basis of knowing whether or not DOT in fact
8 would increase its rate of correction over time within the
9 Muckleshoot U&A, do you?

10 A I do not.

11 Q I want to talk to you about some of the issues that you raise
12 in your declaration regarding efforts -- DOT's efforts to reach
13 out to the Muckelshoots during the course of highway improvement
14 projects, if I may.

15 You, in fact, in your job, review permit applications from a
16 number of different jurisdictions; is that correct?

17 A Yes.

18 Q You review applications from counties, cities, school
19 districts, utilities, the Bonneville Power Administration, U.S.
20 Forest Service, the National Parks Service, the Army Corps of
21 Engineers, the Federal Highway Administration, FEMA, U.S. Fish
22 and Wildlife, as well as the U.S. Coast Guard; is that correct?

23 A I don't review Coast Guard projects. They're in the marine
24 environment.

25 Q Any of the rest of those that are not on the list?

1 A Yes. I'm not sure that that's a complete list, but that
2 reflects the types of agencies sending us information regularly
3 for environmental review.

4 Q It may be underinclusive?

5 A Yeah, it may be.

6 Q Now, you can't think of any other jurisdiction that's doing a
7 better job than the DOT in reaching out to the tribes?

8 A Could you define "a better job"?

9 Q No.

10 THE COURT: Do you have another question, Counsel?

11 By Mr. Shaftel:

12 Q Do you remember at your deposition back in June, Ms. Walter,
13 I asked you a number of questions about how the DOT's efforts
14 compare to other jurisdictions? Do you remember that?

15 A Yes.

16 Q And I went through each one of the individual agencies that
17 -- entities that we've talked about, and I asked you whether or
18 not the complaints that you're having with the Department of
19 Transportation are in fact similar with all these jurisdictions,
20 and you said "yes."

21 Do you remember that?

22 A Yes.

23 Q And then I asked you whether or not you could think of a
24 single one of these jurisdictions that was doing a better job
25 than the Department of Transportation in trying to reach out to

1 the tribes, and you said you could not.

2 Do you remember that?

3 A Yes.

4 Q Now, as far as existing outreach goes, you did mention that
5 the Department of Transportation had certain statutory
6 requirements to reach out to the Muckelshoots, including under
7 NEPA; is that correct?

8 A NEPA and SEPA. The other jurisdictions also have similar
9 requirements.

10 Q And under these statutes, frequently you'll get -- when you
11 have an opportunity to comment, you'll put in close to 100
12 comments on a particular highway improvement project; is that
13 correct?

14 A I'm not sure if the number is correct, but I've been known to
15 put forward substantial numbers of comments, yes.

16 Q And DOT responds to your comments; is that correct?

17 A DOT tends to respond to the comments in the sense of offering
18 a response, but not necessarily modifying the project in response
19 to those comments.

20 Q Sometimes you reach agreement, sometimes it makes changes in
21 light of your comments, and at other times it decides not to, but
22 after in fact evaluating your comments; is that correct?

23 A Yes.

24 Q You have similar opportunities when the DOT has to seek an
25 Army Corps of Engineers permit; is that correct?

1 A It depends on the project.

2 Q Can you clarify what you mean by that?

3 A Currently we do not receive notice of all Army Corps of
4 Engineers permits. So if a project is, say, for example, needing
5 what's called a nationwide permit, under Section 404 we do not
6 typically receive those from the Army Corps of Engineers.

7 Q To the degree that you get notice opportunities with Corps
8 permits, you in fact take advantage of those and the DOT works
9 closely with the tribes in those situations to reach an agreement
10 as to what types of mitigation should be done on those projects?
11 And when I say "tribes," I mean the Muckleshoot.

12 A Yes.

13 Q And as far as outreach to the Muckleshoot, you work in the
14 fisheries division; am I correct?

15 A Yes.

16 Q And there are a number of other divisions that may get
17 contacted by the DOT on their projects; is that correct?

18 A There's at least two that I know of.

19 Q Those are the planning department; is that right?

20 A That's one of them, yes.

21 Q What would be the other one?

22 A The culture preservation and wildlife division.

23 Q If those two departments are getting contacted, you don't
24 necessarily know whether or not they are or they are not getting
25 contacts by DOT on these projects; is that correct?

1 A Yes.

2 Q But DOT also may send information about projects directly to
3 the tribal council; is that correct?

4 A They may. I'm not on the tribal council. I don't know.

5 Q You've never seen any correspondence or been copied on any
6 correspondence between the DOT and the tribal council?

7 A I've been copied on correspondence that's been sent to the
8 tribal chair.

9 Q So you are in fact aware that DOT does correspond with tribal
10 council members?

11 A The tribal chair, yes.

12 Q Now, some of the DOT employees you work with are Allison
13 Hanson, Steve Shipe, and Kerry Ruth; is that correct?

14 A Yes.

15 Q And all three of these employees, you think they're
16 professional?

17 A Yes.

18 Q And they're generally responsive to your concerns?

19 A Yes.

20 Q You're generally pleased with their efforts to reach out to
21 the Muckleshoot?

22 A Yes.

23 Q Now, the Department of Transportation, recently it's been
24 making a lot of progress in reaching out to the Muckleshoot, in
25 your opinion; isn't that correct?

1 A They've increased their efforts to do outreach. I'm not sure
2 if that means progress.

3 Q We talked about a lot of ways that they've -- they're trying
4 to address your concerns about outreach recently at the
5 deposition; isn't that correct?

6 A Yes.

7 Q One of the ways we talked about was that the Northwest region
8 came up with an idea to give you monthly updates about upcoming
9 projects, and Steve Shipe sends you an e-mail every month, or at
10 least was from January through the date of your deposition,
11 telling you what's going on on upcoming projects and current
12 projects; is that correct?

13 A Yes.

14 Q And you think these are great, these are great improvements
15 in your outreach efforts; is that correct?

16 MR. STAY: Object to the form of the question, your
17 Honor.

18 THE COURT: Overruled.

19 You may answer. Whatever you think.

20 THE WITNESS: I think the monthly communications are
21 helpful to increase our knowledge about what's going on with
22 projects or any updates.

23 By Mr. Shaftel:

24 Q And last season, this last winter, you were in fact provided
25 pretty good notice of emergency projects; isn't that correct?

1 A Not all.

2 Q I asked you about that in your deposition, and I asked you
3 whether or not you had been given good notice of emergency
4 projects this last season, and that was your answer; isn't that
5 correct?

6 A I received information on a couple of the projects that
7 underwent emergency work. As I mentioned earlier during the
8 question session with Mr. Stay, we received information about the
9 need to do emergency work in the State Route 410/Clay Creek
10 instance, but the actual details of that work were not provided.

11 MR. SHAFTEL: I would like to move to publish --

12 By Mr. Shaftel:

13 Q Well, let me ask you. Ms. Walter, I took your deposition on
14 June 5th, 2009. Do you remember that?

15 A Yes.

16 Q And there was a court reporter there?

17 A Yes.

18 Q And the court reporter was taking a transcript of that
19 deposition and gave you a copy of that deposition; is that
20 correct?

21 A Yes.

22 Q And you reviewed it before signing it?

23 A Yes.

24 Q But you did eventually sign the transcript and send it back?

25 A Yes.

1 MR. SHAFTEL: Your Honor, I'd like to publish the
2 deposition of the oral examination of Karen Walter.

3 THE COURT: You may.

4 By Mr. Shaftel:

5 Q I am going to ask you these questions a little bit
6 differently, because I don't think I fairly characterized your
7 answers. Let me see whether or not we can agree.

8 At the deposition, I believe what I asked you was --

9 THE COURT: Mr. Shaftel, why don't you just put it on
10 the viewer.

11 MR. SHAFTEL: Sure.

12 By Mr. Shaftel:

13 Q Ms. Walter, I am showing you Page 141 from your deposition
14 transcript. Do you see on Line 4, "What was it like last
15 year" -- I asked you the question: "What was it like last year?
16 Well, last year, I should say, what was the level of
17 communication like?"

18 And you said: "It was improved over previous years."

19 And then I asked you the question: "Would you describe it as
20 greatly improved?"

21 And you said: "Yes."

22 And "Would you describe it as very responsive?"

23 And you said: "Yes."

24 Is that consistent with your memory of your answers to that
25 deposition?

1 A It is. But as I noted previously, it would be helpful to not
2 just talk about the emergency work, but the details of that work
3 that's undergoing at the time.

4 Q Now, DOT holds annual meetings on Section 106,
5 "Consultations."

6 Are you aware of that?

7 A Yes.

8 Q And at these meetings, upcoming projects are discussed; is
9 that correct?

10 A Yes.

11 Q And tribes are given the opportunity to voice concerns about
12 the projects at that time; is that correct?

13 A Yes.

14 Q And you've been invited to these meetings?

15 A I invited myself to those meetings, yes.

16 Q And you in fact attended those meetings; is that correct?

17 A For the last few years, yes.

18 Q And that's been an improvement in communication between the
19 DOT and the Muckleshoots?

20 A Yes.

21 THE COURT: Counsel, how much more do you have?

22 MR. SHAFTEL: Probably another 10 or 15 minutes.

23 THE COURT: Mr. Stay, are you going to have redirect?

24 MR. STAY: Probably two or three questions. It should
25 be no more than that.

1 THE COURT: All right. Go ahead.

2 By Mr. Shaftel:

3 Q The Department of Transportation recently issued a NEPA
4 handbook for DOT employees that helps give them guidelines for
5 consultation with tribes; is that correct?

6 A Yes.

7 Q And before it was issued, the DOT obtained input from tribes
8 to improve -- so that they could offer suggestions as to how to
9 improve consultation with tribes; is that correct?

10 A Could you restate that question?

11 Q Before the NEPA handbook was issued, the Department sent a
12 draft to the tribes, including the Muckelshoots, and asked for
13 comments on it?

14 A Yes.

15 Q And you gave some comments on it?

16 A Yes.

17 Q And that handbook encourages earlier outreach on NEPA
18 projects than what is statutorily required; is that correct?

19 A Yes.

20 Q And that's also an improvement over what has historically
21 been the communications between DOT and the Muckelshoots; is that
22 correct?

23 A It's too soon to tell, but hopefully, yes.

24 Q If it's implemented the way that it's designed, it would be
25 an improvement; is that correct?

1 A It should be. But, Counsel, if I might add, not every
2 project goes through NEPA.

3 Q I want to ask you a couple of questions about the mitigation
4 that you talk about. I believe it's in Section 6 of your
5 declaration, "Stream Crossing and Facts of Mitigation."

6 It's my understanding, as a broad overview, that what you're
7 asking for is that if DOT would, for example, take out a
8 three-foot culvert and install a ten-foot culvert, you would want
9 to see mitigation in addition to the impacts that DOT's having
10 through the construction project for the past and future impacts
11 that the road crossing itself will have on the habitat; is that
12 correct?

13 A I'm not sure I'm following your question.

14 Could you clarify it, please?

15 Q I'm trying to understand that even if in a situation where
16 DOT is taking a smaller culvert and building a much bigger one,
17 replacing it with a much larger one, you want to see mitigation
18 in addition to the mitigation that would typically be required
19 for the construction project itself and the impact that it's
20 having on the habitat, and that additional mitigation consists of
21 impacts that the road crossing is having on the overall stream
22 habitat for both the past and future impacts; is that correct?

23 MR. STAY: Your Honor, that's a mischaracterization of
24 her testimony. She talked about the additional impacts of the
25 fix.

1 THE COURT: Yeah. The objection is sustained. I think
2 what she said, Counsel, is she talked about avoiding, minimizing,
3 and mitigating. So whenever there's a change in any existing
4 area, a blocking culvert, you put a bridge over it, and you need
5 a piling for that bridge, you are going to affect something else.
6 You've taken care of one problem, but now you've got another
7 problem.

8 MR. SHAFTEL: Sure. I understand that part of her
9 testimony but --

10 THE COURT: What exactly are you asking her?

11 MR. SHAFTEL: Well, it's a question I asked her in her
12 deposition because I was trying to figure out what in fact she
13 was meaning.

14 By Mr. Shaftel:

15 Q I believe I asked you this question at your deposition, where
16 I asked you whether or not you wanted to see mitigation for -- in
17 this past and future impacts of road crossings, upstream and
18 downstream, whenever DOT fixes a culvert, whether or not it's
19 putting in a larger one in place of a smaller one. And I believe
20 your answer was "yes."

21 Is that inconsistent? Am I mis-remembering?

22 A We'd have to go back to my deposition, because I'm not sure
23 the question is being phrased as it was during the deposition
24 now.

25 Q Well, let me just ask you if that's your opinion. Is that

1 what you intended by this section of your declaration?

2 A No. The section of the declaration is talking about more in
3 line with what the judge has described, where there's a change in
4 the condition from the existing condition to the new condition
5 and the fact that just because you're improving fish passage does
6 not mean that the new structure is not without its own impacts,
7 and those impacts need to be mitigated.

8 Q So is that the type of mitigation that would typically be
9 handled through the hydraulic project approval process, to your
10 knowledge?

11 A Well, it depends. It depends if -- the construction impacts,
12 yes. But future impacts as it may relate to streambed scours as
13 a result of a new piling in the channel, it may not be.

14 Q And the way generally it works with regard to mitigation for
15 HPA applications is that you start with existing conditions and
16 you look at changed conditions, and then any changed conditions
17 that occur due to the project, there are mitigation requirements
18 imposed on those changed conditions; is that correct?

19 A I don't know. I don't do HPAs, so I don't know.

20 Q So you don't know what is the extent of mitigation that's
21 required for an HPA?

22 A Well, it would vary by the project and the area habitat
23 biologist writing the HPA.

24 Q So, in fact, the types of mitigation that you're asking for
25 might in fact be required under an HPA, to the best of your

1 knowledge?

2 A They could be.

3 Q Do you know whether or not any of -- well, sorry. Strike
4 that question.

5 I'd like to ask you some questions about your comments on
6 when you think the Department of Transportation can deviate from
7 the most protected fish standards.

8 Ms. Walter, you're a biologist; is that correct?

9 A Yes.

10 Q But you're not an engineer; is that correct?

11 A I am not an engineer.

12 Q And in fact, if you were in the field, you wouldn't be able
13 to tell the difference between a hydraulically designed culvert,
14 a no-slope design culvert, or a stream sim design culvert; is
15 that correct?

16 A No, I could not.

17 Q In fact, you don't even know if you've ever seen a no-slope
18 culvert; is that correct?

19 A They were not labeled, so, no, I would not know that.

20 Q And you've never done any sort of measurements or studies to
21 determine whether or not the culverts that you've seen built in
22 the Muckleshoot U&A are any one of these three designs?

23 A No, I have not.

24 Q In fact, with regard to the ability of these three designs to
25 pass fish, you would defer to an expert -- well, let me ask the

1 question this way. Do you know -- do you know WDFW engineer Bob
2 Barnard?

3 A Yes.

4 Q And Bob Barnard is in fact an expert on the efficacy of the
5 fish passage design methods, hydraulics, no-slope and stream sim;
6 is that correct?

7 MR. STAY: Objection, your Honor. Calls for a
8 conclusion of his expertise without any evidence about that
9 expertise.

10 By Mr. Shaftel:

11 Q I'm just asking for her knowledge.

12 A I hope he's an expert.

13 Q And in fact, in your experience, he in fact has more
14 expertise on that topic than you; is that correct?

15 A Yes.

16 Q I'd like to ask you a question about Thunder Hills. You
17 mentioned Thunder Hills and how -- I believe what you said there
18 was because it was an emergency -- it was an emergency situation,
19 is that correct, Thunder Hills? The need to replace the culvert
20 was an emergency due to a culvert failure?

21 A That affected the timeliness, yes.

22 Q And as a result of that, when DOT applied for its HPA, doing
23 waterwork, the tribes were brought in, and there was an agreement
24 reached as to what types of mitigation would be done instead of
25 replacing the culvert and making it fish passable; is that

1 correct?

2 A The permit conditions for that project laid out a process by
3 which that culvert would be considered first for a solution that
4 would make it fish passable. And there was a hierarchy, if that
5 couldn't happen, what else would happen in lieu of fixing that
6 particular culvert.

7 Q What permit conditions are you talking about?

8 A Those are permit conditions within the Army Corps of
9 Engineers, the nationwide permit that was issued under
10 Section 404 of the Clean Water Act.

11 Q And so there, the existing law required -- or the existing
12 regulatory agencies in fact required DOT to work with the tribes
13 to reach a mitigation agreement; is that correct?

14 A The Army Corps of Engineers did.

15 Q And in fact, an agreement was reached?

16 A A three-way agreement was reached between the DOT and the
17 Army Corps of Engineers and the Muckleshoot Indian Tribe.

18 Q And were you involved in that agreement?

19 A Yes.

20 Q And you're happy with the outcome?

21 A We're not done yet, but so far so good.

22 Q So that's a situation in which the existing processes worked;
23 is that correct?

24 A That's an instance where we had a couple of things happen.
25 One, we had an emergency which forced an action. Two, the

1 emergency was such that the project was going to qualify for a
2 nationwide permit which, as I mentioned earlier, we don't
3 typically see. But in that instance, both DOT and the Army Corps
4 of Engineers made efforts to make sure that we had an opportunity
5 to review that, comment, and weigh in on that particular permit
6 and its conditions.

7 Q I want to ask you a question about the Renton Nickel project.
8 You said there was a number of culverts that DOT -- that were
9 within the scope of the project but that were not fixed; is that
10 correct?

11 A Yes.

12 Q Do you know whether or not the Renton Nickel project is in
13 fact a phased project?

14 A It is my understanding that, yes, it is a phased project.

15 Q And what you're really talking about is you're talking about
16 Phase I of the Renton Nickel project; is that right?

17 A As far as I know, it was Phase I. It wasn't necessarily
18 characterized that way, but I think so.

19 Q We'll just call it that. And during that initial phase, the
20 only one -- the only culvert that was fixed was also the only
21 culvert that DOT in fact needed to do work on for that particular
22 phase of the project; is that correct?

23 A No, that's not correct.

24 Q Was there another culvert the DOT needed to work on?

25 A Yes.

1 Q Which one was that?

2 A I believe the culvert was Culvert No. 66. I think that's the
3 correct number. There was a culvert in that project that was
4 extended approximately two feet that was identified as a fish
5 passage barrier that was not replaced with a fish passage
6 culvert.

7 Q Did the DOT have to get an HPA for that?

8 A Yes.

9 Q Are you saying the WFDW allowed DOT not to fix that culvert?

10 A As far as I can tell.

11 Q As far as the rest of them go, none of the rest of them, at
12 least to your knowledge, DOT was working on at that point?

13 A Yeah. They were not modified.

14 Q During this particular phase?

15 A Yes.

16 Q Do you understand that when DOT comes back and it does the
17 second phase, the DOT will in fact be working on -- or it may in
18 fact be working on the vast majority of those culverts?

19 MR. STAY: Objection. It calls for speculation.

20 MR. SHAFTEL: I'm just asking for what she knows.

21 THE COURT: If she knows.

22 Objection overruled.

23 THE WITNESS: I don't know that for a fact. There's a
24 Phase II project for that area, and they're going right now. And
25 I'm not aware that that actually involves any culvert repair.

1 THE COURT: Mr. Shaftel, I need you to wrap this up.

2 MR. SHAFTEL: If I could look over my notes, your Honor?

3 Thank you, Ms. Walter.

4 THE WITNESS: Thank you.

5 THE COURT: Redirect.

6 MR. STAY: Thank you, your Honor. I will be brief.

7 REDIRECT EXAMINATION

8 By Mr. Stay:

9 Q Ms. Walter, Mr. Shaftel talked about an HPA. What's an HPA?

10 A That's an acronym for, at least in our world, Hydraulic
11 Project Approval Permit.

12 Q Do those documents contain a lot of information that would be
13 useful in evaluating culverts in road projects?

14 A They can.

15 Q Are those items, the HPAs, something you would need and like
16 to have in your work?

17 A Yes. I would like to be able to review HPAs as part of my
18 work.

19 Q Do you get those from the Department of Transportation?

20 A No.

21 Q With respect to culverts, is it your understanding that if
22 there's an HPA issued by the Department of Fisheries, then that's
23 when the Department of Transportation will fix that culvert, if
24 there's an HPA?

25 A Yes.

1 Q One last question. You mentioned Section 106.

2 Is that basically a fisheries-related section?

3 A No. Section 106 is referring to the National Historic
4 Preservation Act, and it's dealing more with archeological and
5 cultural resource issues, not necessarily fishery resource
6 issues.

7 THE COURT: You said that was your last question.

8 MR. STAY: Your Honor, if you have to remind me, I guess
9 it's my last question, and I take that as a reminder.

10 THE COURT: Thank you, Ms. Walter. Thank you very much.
11 We will be at recess until tomorrow morning.

12 (Adjourned for the day)

13

14

15

16

17

18

19

20

21

22

23

24

25

CERTIFICATE

I, Barry L. Fanning, Official Court Reporter, do hereby
certify that the foregoing transcript is true and correct.

S/Barry L. Fanning

Barry L. Fanning